

COAL AGE

The Only National Paper Devoted to Coal Mining and Coal Marketing

C. E. LESHER AND R. DAWSON HALL, Editors.

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Dramatic Suspense?

PRESS reports indicate that the United Mine Workers will withhold the formulation of their "demands" until after the first of the year, and not, as has been customary, outline their program at their annual convention, now in session. So much of what transpires in union circles now may be defined as internal politics that failure to announce whether they are willing to strike for a 20-per cent raise or one of 60 per cent need cause no surprise. The present officers will make their stand for retention on an aggressive program of radical demands.

The consumer of coal, both hard and soft, should not overlook the almost certainty of protracted coalmine suspension beginning next April. No one can afford not to protect himself by storing in the next six months whatever he needs for a protracted period from April 1—possibly to July 1, 1922. The coal miners will not accept the inevitable reduction without a long struggle.

Advertising Anthracite Ethics

THREE of a projected series of twelve large newspaper advertisements of the anthracite producers have appeared in 100 daily papers in the territory served by hard coal. A huge expenditure is thus indicated. Is it a necessary expenditure? Is it wise? Will it accomplish its purpose? These are questions that the coal trade is asking. Whatever the series as a whole may develop it is clear from those that have appeared that the purpose behind this campaign is to explain prices. Reproductions of these advertisements will be found on pages 509 and 510 of this issue.

In watching the unfolding of this campaign it is well to have in mind that it is not a campaign to sell anthracite coal—that commodity sells itself in time. It is a campaign to explain to consumers why prices of hard coal have not been reduced, why alone of things used by the ordinary citizen it is going up instead of declining. The public, reasoning by analogy, thinks that as a matter of course the price of hard coal must be due for a drop and to an undetermined but doubtless considerable extent, and for that reason has not purchased as usual the past summer against this winter's needs. In the sense that overcoming this belief will promote the purchase of the tardily moving domestic sizes, the advertising campaign, one for which there is great need and which offers great opportunities for the advancement of the coal industry as a whole, is warranted and advisable.

The scope of the prejudice to be overcome must be fully appreciated by the coal operators, or they would not have abandoned their traditional policy of silence. The lack of spontaneity in the copy so far released testifies to the seriousness of the effort. It is evident also that operators are assuming only to explain mine

prices. They obviously are steering clear of the freight-rate question and the matters of retail-dealer margins and profits. The part of the jobber in the distribution of anthracite and his share of the margin apparently are to be ignored.

This form of advertising can be defended on the ground of economy, at least economy in the long-run, according to L.D.H. Weld in a discussion of the packing industry in the *American Economic Review* of last March. He says "Willful misrepresentation of an industry, with the resulting prejudice that is built up in the minds of many people, results in an ill will (instead of good will). Such an ill will makes it harder to sell products, makes it easy for federal and state governments to pass harmful and uneconomic laws, and threatens the very stability of the business. If advertising designed to overcome such ill will should fail of its purpose, then it would have been wasted; if it succeeds, the benefits to the corporation and to the public cannot be measured in dollars and cents."

Just so the possibility for good to the coal industry as a whole that lies in this co-operative effort of the anthracite operators can never be measured in money value. Appearance of the third piece of copy has done much to allay the criticism provoked by the first two pieces. Neither of the first two was calculated to answer the suspicion of the consumer that profits are unreasonable, for in neither did the operators frankly tell their complete story in figures. Happily the third is more definite.

Should the operators succeed, as we trust and hope that they will, in satisfying the consumer of the squareness of their position there yet remains the necessity of explaining the delivered price. What we pay for coal at the curb is the important figure. If the producer is not gouging, then who is? will be the next question. The railroads have but to say that the government, through the Interstate Commerce Commission, has fixed their rates. The retail dealers are alive to the situation thrust upon them and, as stated elsewhere in this issue, have launched an advertising campaign of their own.

We have one suggestion to make. The number of cities in which the producers are publishing their advertisements is limited to perhaps seventy-five or eighty. There is, therefore, no great bar to using at least one advertisement in each city to give the cost of coal f.o.b. cars, taking care to show the cost of coal plus freight and war tax in the kind of tons in which it is sold at retail in that city.

After all is said, may it not develop that the consumer will rise up and say "granted that costs, from mine to curb, are what you say, that profits are reasonable, nevertheless the price is too high? Reduce costs, for I will not pay such prices for coal. If mine labor is getting the profit, then let mine labor take less wages, but in any event give us our coal cheaper."

Selling—an Infant Art in Coal

IT IS decidedly unusual in our experience to have selling and salesmanship discussed so clearly and intelligently by a coal man as was done by D. F. Williams, vice president and general sales manager of the Hudson Coal Co., in his address before the recent convention of the retail dealers of New York State, which we publish in full in this issue. Selling is not a lost art in coal; it is an art that has never been developed.

Although coal is distributed in a highly competitive market, it has not been necessary until recent years for the vendor to spend time and effort in a study of the art of salesmanship. It is true that a few, a very few, have followed this course, and for them it has proven profitable. But there has been no general recognition by the coal trade of the basic theory of modern trade practice that in dealing with the vast multitude of the public the vendor, particularly of necessary commodities, must build trade on confidence and good-will. It is not fair to indict the coal trade alone in this respect, but rather to note that other industries have progressed far in meeting this requirement, whereas the coal industry has only begun.

Before commenting on Mr. Williams' address we would point out that advancement in selling and merchandising any product that reaches a multitude of consumers has in every instance been the result of the efforts of large-scale producers and distributors. The retailer, except in few individual cases and those only of outstanding size and influence, has never been a source of inspiration to trade; he has not translated thought into action in meeting the problems of dealing with a consuming public, problems that he faces at their inception because of his front-line position.

With this thought in mind it is refreshing to turn to the words of one who oversees the distribution of several million tons of domestic coal through dealers to householders and find that "the time is here when we must carefully question our salesmanship abilities, must inquire into our local reputations for integrity and fairness and must give some thought to our temperament." And again, "Since the beginning of the war there has been practically no coal selling in this country. There has been a great deal of order taking; by order takers, not salesmen. . . . During the past few years in the coal trade we have told the buyer what he could have and at what price."

That times have changed is recognized, for the dealer is advised to acquaint himself with "actual conditions as they exist today" and to put into his business "that courage, optimism and resourcefulness that are so necessary for present-day selling." A coal merchant, one of six in a town, who said he was disappointed with the possibilities for expansion, was pointed out as one who had laid down on the job, and who, if he could not wake up sufficiently to use modern methods of encouraging trade, had best consider that he was a failure of his own making.

Mr. Williams did not confine himself to generalities; he talked in terms of constructive details and his arguments for, and examples of, good practice have a far wider application than in the realm of the retail coal merchant. For instance, he says: "How many really appreciate the value of the figures that are prepared and placed before you?" Statistics are of value only as they are used, and he asks how many

have made such elementary use of their own figures as to reduce their annual tonnage to a daily basis and use that as a constant mark at which to shoot.

Beyond a high sense of integrity, a knowledge of the goods sold, a knowledge of existing conditions and of a desire to serve, backed up by an energetic application of common sense, there is no secret to salesmanship, we are told. Confidence is declared to be the keystone of success; to gain the confidence of the public requires a one-price short-credit and an open advertising policy.

The dealer is told that he can never succeed until he knows his product—coal. He must know grades and quality, how coal is mined and prepared. He should visit the mines and otherwise familiarize himself with all phases of the business.

Stress is properly laid on the environment of the dealer—the appearance of his place of doing business. How true it is that if your "environment is such that it breeds carelessness and inattention to detail; if it is such that it creates in you, a dealer, a feeling of smallness, of inferiority, you are working under a handicap that no amount of personal energy may overcome." It is urged that a good setting is a part of good selling.

Mr. Williams' address is shot through with sound ideas and homely sense. Every one who reads it—and every man in the coal game should read it—will be impressed with the thought that in talking "Salesmanship" to a convention of coal dealers Mr. Williams was doing a first-rate job of selling. He "sold" the idea that his company believes the things he said and that such a company is one to tie to. He must have created an added feeling of confidence in himself and his concern by such a frank survey of the coal business.

This cataloging of the ways to do business better, each of us knows, is really a statement of the essential items in which the retail coal trade has fallen short of meeting modern requirements. And if these things should be observed by the coal merchant how can the producer help supply the incentive to the one man—the retailer—who represents his contact with that all-important public?

The sales managers of every coal company in the country can talk until doomsday and they will never convert 50,000 retail dealers to the proper ideas of selling and service. There is just one way for the coal industry to reach that high estate of public confidence and that is to tell the public what it should expect from the merchant from whom it buys its coal. The average retailer will reform his methods and practices in those essential particulars outlined by Mr. Williams only when his customers, the household consumers—that great body of American people whose good opinion is so valued—demand better treatment.

The coal industry could well afford to spend a million dollars a year for as many years as are necessary to educate the public into an appreciation not of the intricacies of the industry in which it has but a curiosity but rather of what is good coal, how to burn it and the kind of retailer service to which the buyer is entitled.

National standards of service can be set up and in the respective areas of hard- and soft-coal burning separate standards of quality and methods of use can be established. The retail trade can never be expected to do this; it is the duty and responsibility of the producer.

Indianola Pumps Water from Allegheny River Wells And Treats Its Sewage by Bacteria and Chlorination

Water Is Raised Against Static Head of 355 Ft.—Sewage Fed to Imhoff Tank by Pumps, Which Start Automatically as Required—Liquid Goes to Dosing Tank, Sprinkling Filter and Settling Tanks

BY ALPHONSE F. BROSKY
Pittsburgh, Pa.

UNFORTUNATELY coal-mining plants, and therefore the towns housing their employees, must be brought to the coal. They are not like factories, to which the material for manipulation is brought. In the early days the problem was simple. Ramshackle houses were thrown together to protect the people from the elements, and a group of such houses was called a town. The evolution of the present-day mining community has been gradual, possibly more progress having been made within the last ten years than in all those prior to that time. The model mining town of today, in order to be complete in its appointments, must have an adequate water supply and sewerage system.

The Inland Collieries Co. found difficulty in obtaining sufficient potable water at its Indianola mine, which is located about twelve miles northeast of Pittsburgh, Pa. An exhaustive study of the geology of the region precluded all possibility of obtaining locally a supply that would be both ample and inexpensive. The decision was then made to drill wells on the bank of the Allegheny River just above Harmarville, at a point nearly three miles distant. Here a pumping station was located to force the water to Indianola.

Three wells were drilled extending 44 ft. below the level of the river when the "pool" is full. These were connected to two 350-gallon Deane motor-driven triplex pumps, one machine serving as a spare. These pumps

are installed in a dry concrete pit of circular form, housed within a brick superstructure of plain, but not unpleasing, design.

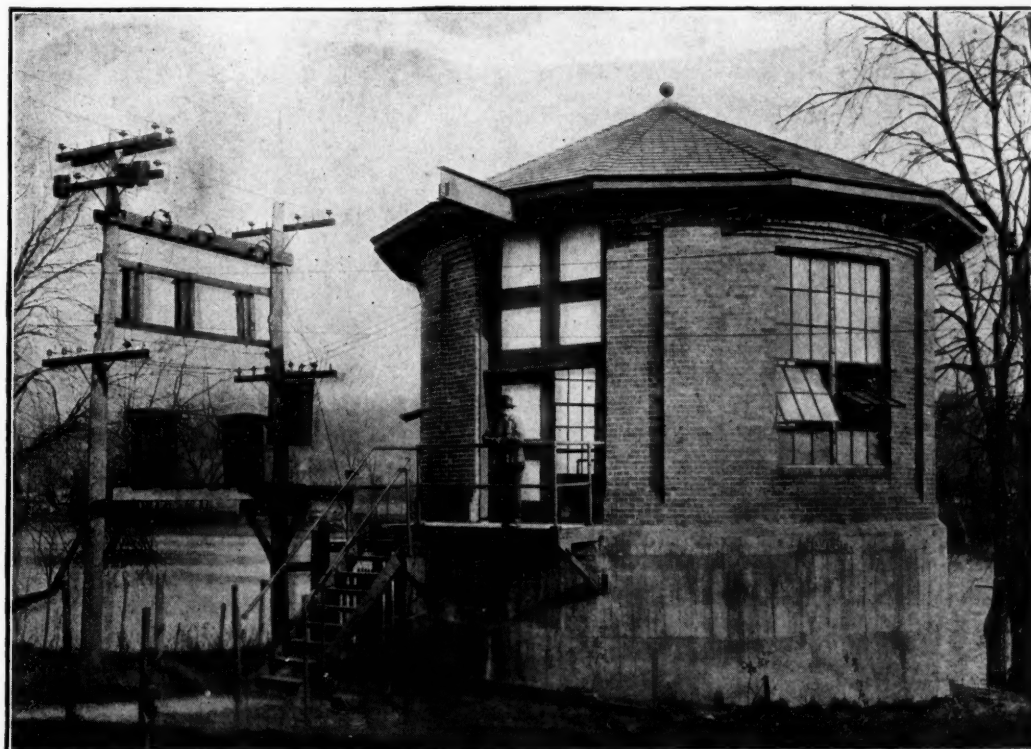
From the pumping station the water passes to the town through an 8-in. cast-iron pipe. Here it is distributed to the consumers through 12,000 ft. of 4- to 6-in. cast-iron water-mains, connected to the houses by means of smaller service lines. Fire hydrants are installed throughout the town. A steel tank having a capacity of approximately 420,000 gallons is located at a sufficient height to give the necessary head to the fire system; it also serves as an overflow outlet for the distribution system and a storage for fire protection.

The entire water system as built is complete in detail and represents the highest type of construction, embodying quantity, quality and safety, in both potability and fire protection. A pump operator, who resides on the property adjoining the pumping station, takes care of the pumping during the day. It has not been found necessary as yet to pump throughout the whole twenty-four hours.

The water as taken from the well is sparkling, cool and abundant. Frequent analyses are made to safeguard its purity. Only two of the three wells are now used, the third being kept in reserve to augment the present supply, should this become necessary. The Inland company constructed the pump station, force main

Pumping Station

This Harmarville pumping station is located at such a level that the water table in the walls is always at no great distance above the stream. Water travels through the ground adjacent to the river and is usually found but little below the level of the stream itself. In this station two 350-gal. motor-driven triplex pumps, one of which is a spare, are placed in a dry concrete circular pit. The wells extend below the pool level of the stream.





Sprinkling Filter

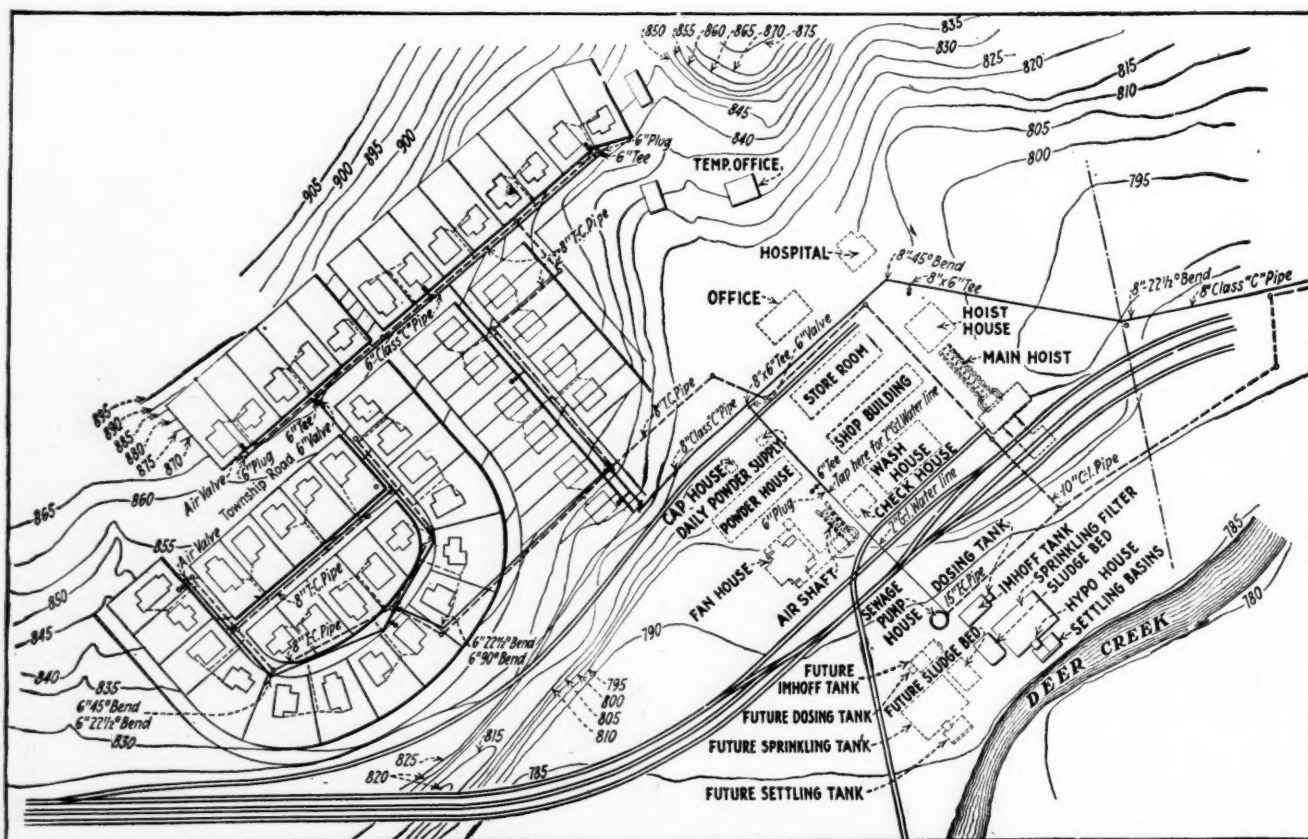
The effluent from the Imhoff tank after dosing is sprayed over the surface of a gravel bed and thus aerated. Underdraining removes the liquid to the final settling tank. Back of the filter can be seen the pump station and the Imhoff tank. The building to the left is a temporary boiler plant.

and reservoir tank with its own labor. By this means an appreciable saving in cost was effected.

Deer Creek, which becomes quite low during the summer months, flows through the company's property. Because of water shortage during the hot season the raw sewage from the town could not be discharged into this stream without jeopardizing the health of the community. It became necessary therefore to furnish some other means of sewage disposal, and a solution of the problem was found in the present plant, which is

located on the bank of Deer Creek, the effluent being discharged into that stream.

The works were designed to handle the sewage from 1,250 people, the quantity to be treated being estimated at 100 gallons per day per person. The plant is in operation continuously and is automatic in action, but the flow of sewage usually is confined to about sixteen hours out of each day. The installation itself consists of a pump station, roughing screen, Imhoff tank, sprinkling filter, chlorination plant, sludge bed and resettling tank.



VILLAGE OF INDIANOLA SHOWING WATER AND SEWER LINES AND THE SEWAGE DISPOSAL PLANT
The pipes shown by heavy lines are those used for water-supply purposes, while those dotted are sewer lines. The illustration shows in dotted lines the extensions of the sewage disposal plant which will be made when the village of Indianola so develops as to need them.

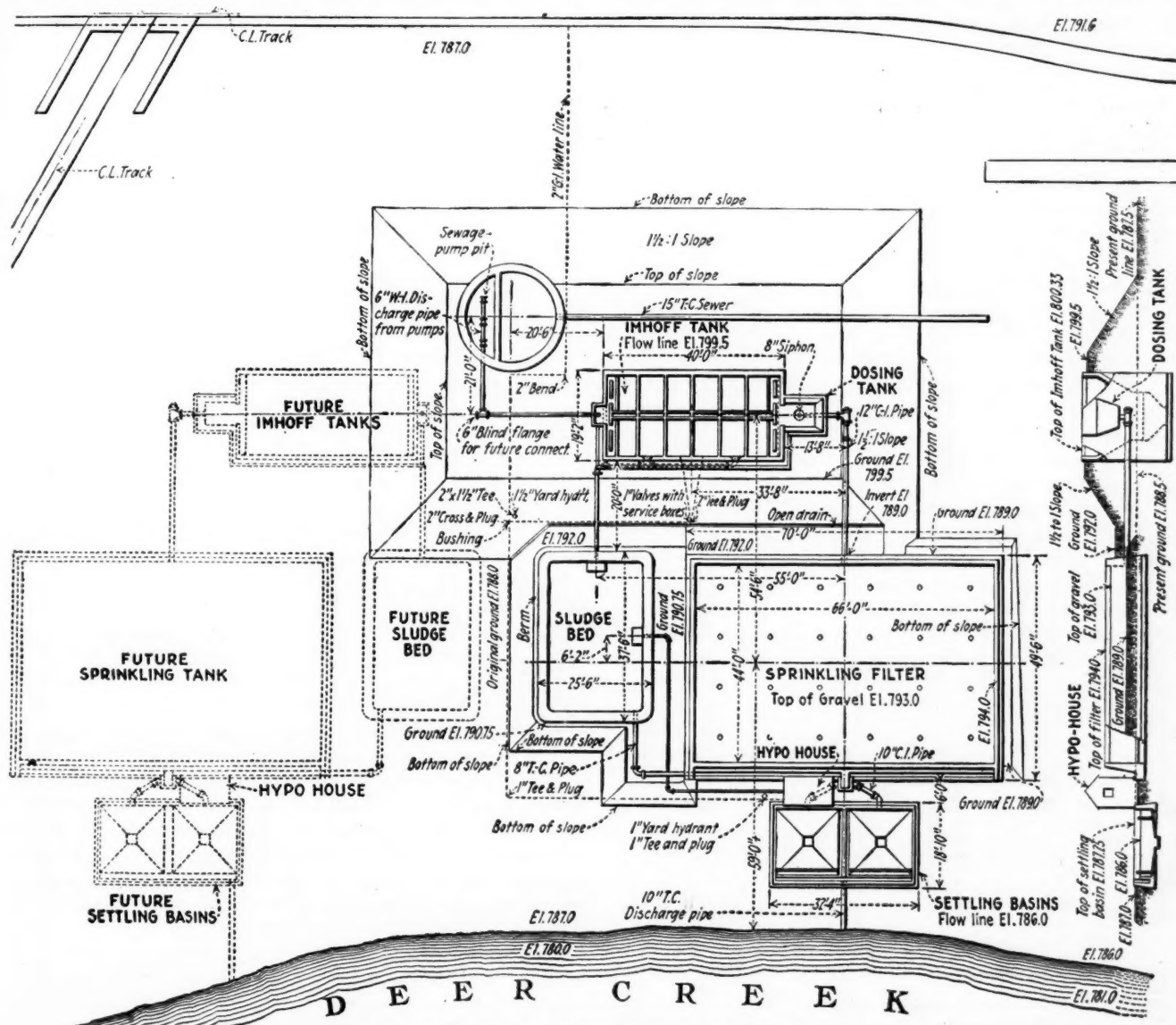
Owing to the surface conditions it became necessary to install a pump to lift the incoming sewage to the treatment plant.

Two Yeomans Bros. centrifugal pumps manufactured by the Davidson Gas Burner Co. and having a capacity of 300 gallons per minute are installed in this station and operate automatically by means of floats. When the sewage rises in the well, one float at a predetermined level throws a switch, thus putting one of the pumps in operation. Should the flow continue to gain on the first pump, a second float 15 in. higher than the first starts the second machine to work, consequently there is little danger of sewage flooding the pump station.

A third pump has been installed. This is a centrifugal unit driven by a small Novo gasoline engine. It is used as an emergency pump in case something happens to the electrically-driven units. The roughing screens are located in the well, within the pump station, and serve to catch any sticks, rags, paper or other indestructible material which might happen to accompany the sewage. These screenings are removed periodically by means of a bucket which is lifted from the well by the aid of a hoist. To avoid infection the screenings are buried.

The sewage is discharged by the pumps into an Imhoff tank—a two-story concrete settling and digesting container. The clarified liquid passes on from the upper compartment for further treatment. The solids—or sludge—reach the lower chamber through a slot in the inclined bottom of the upper one, and are retained for reduction in volume through anaerobic bacterial action which liquefies and gasifies some of the organic matter and leaves a residue of humus and other harmless solids.

The clarified sewage or Imhoff tank effluent passes to a dosing tank where it receives hypochlorite of lime for disinfection and then is siphoned automatically at frequent intervals to the sprinkling filter. This consists of a filter bed of broken slag over which the sewage is sprinkled by spray nozzles attached to vertical risers connected with horizontal pipes laid in or beneath the bed. The spraying and filtration lead to aerobic bacterial action, or oxidation, which reduces the organic matter remaining in the Imhoff-tank effluent to a non-putrefactive condition. The sprinkler-filter effluent is collected by underdrains from which it is conveyed to the secondary or final settling tanks for the removal of any remaining settleable solids. The final tank effluent,



PLAN OF SEWAGE DISPOSAL WORKS AT INDIANOLA

The sewage comes to the plant by a 15-in. terra-cotta sewer and passes direct to the Imhoff tank. The clarified liquid then goes to the dosing tank and is siphoned automatically to the sprinkling filter which

impregnates the liquid with oxygen, oxidizing its impurities by the action of aerobic bacteria. The effluent is collected by underdrains, where a dose of hypochlorite of lime is added. The fluid is now harmless and

is discharged into Deer Creek. The sludge tank receives the solids from the Imhoff tank periodically, the liquid accompanying them being passed to the final settling tanks and thence to the creek.

after receiving another dose of hypochlorite, is discharged into the creek as a relatively clear colorless liquid.

The digested sludge is removed from the Imhoff tanks several times each year, being forced out automatically by the weight of the water above, the discharge being effected through a gate-controlled sludge pipe. It is deposited on a sludge bed 8 to 12 in. in depth, and there allowed to drain and dry out. It is then removed for use either as filling or as fertilizer.

The sewage plant is unusually thorough in its treatment and was designed to yield a truly non-putrescible effluent, as is desirable where sewage must be discharged into a stream having as low a flow as Deer Creek. No offensive odors can be detected at the disposal works.

This plant requires little attention, as it is entirely automatic. The company plumber spends but a short time each day removing the screenings and refilling the chlorination tanks. Lubrication and periodical adjustments, of course, are necessary in any plant. These, however, in this case require but little time. The attendant spends most of the day in performing duties elsewhere.

The sewer system consists of approximately 21,000 ft. of 4-in. to 15-in. terra-cotta pipe, together with house connections and other appurtenances necessary for housing development and mine buildings. The designers of the sewage-disposal system were the J. N. Chester Engineers of Pittsburgh, Pa. The general contractor was Thomas Starrett Co., also of Pittsburgh.

Seven Methods of Utilizing Anthracite Slush and What Success Has Been Attained with Each Method*

Manufacture of Briquets—Anthracite—Hand-Firing to Furnaces—Stoker Firing—Firing with Admixture of Bird's-eye or Bituminous Coal—Pulverization

BY JOHN GRIFFEN

IT IS OUR opinion that all anthracite shipped should, and eventually will be, converted into a form that can be used as a domestic fuel. The gradual exhaustion of the anthracite reserve tonnage and the increased cost of extraction will gradually force the conversion of the buckwheat sizes and the coal now lost in the slush into some form of fuel satisfactory for domestic use. The time will come when practically the only anthracite tonnage used for the generation of power will be that required for mine fuel. During the past few years considerable work has been done toward the utilization of the finer sizes of anthracite. It is the purpose of this paper simply to summarize the accomplishments to date.

Considerable progress has been made in the briquetting of anthracite; in 1920 nine plants were in operation and produced 330,125 short tons. This production was 50 per cent higher than the output of any previous year. According to reports to the government, the average price received during 1920 for all briquets, whether of anthracite or other coals, was \$7.50 per short ton.

Operating costs during 1918 for one plant of 50,000 to 75,000 tons annual capacity, using the Dutch oil process were, per gross ton, as in Table I.

TABLE I. OPERATING COST OF BRIQUET PLANT PER TON

Binder.....	\$1.25
Slush.....	1.00
Superintendence and labor.....	.40
Power, light, heat and water.....	.15
Supplies.....	.05
Maintenance.....	.05
Interest on investment.....	.10
Depreciation.....	.20
Insurance, compensation, and taxes.....	.05
Royalty.....	.10
Total.....	\$3.35

This amounts to \$3 per short ton.

As 4,000,000 gross tons of fine coal carrying under 15 per cent ash can be recovered from slush at an aver-

age cost of 30c. per ton and delivered to the briquetting plant and dried for a total of 75c. per ton, the above costs indicate an attractive margin of profit, provided a market for the tonnage can be obtained at prices approaching those of stove and chestnut. So far, trouble had been experienced in producing an anthracite briquet that in all respects can be substituted for anthracite. The main difficulty has been to produce a briquet that could be fired like anthracite without producing smoke, soot and odor. Conversion of the 4,000,000 tons of recoverable low-ash coal in the slush into briquets would add approximately 9 per cent to present shipment of domestic anthracite.

Anthracite—During the last few years a new fuel has been developed by heating in a coking oven a mixture of fine anthracite and coal-tar pitch, or similar bituminous materials. This fuel has much the appearance of coke, but greater hardness, density and strength. Its volatile matter averages from 2.5 to 3 per cent and it exhibits all the burning qualities of anthracite. Several carloads have been manufactured, shipped and burned as a domestic fuel with most satisfactory results. Tests made on a semi-commercial scale of operation show that the cost of manufacture will not exceed that of furnace coke.

As the fine anthracite used as raw material can be cleaned so as to show an ash content less than 15 per cent, anthracite can easily be produced carrying less ash than average domestic anthracite. As the domestic user is required to make no changes from his method of burning anthracite, one of the most serious marketing obstacles will not arise and prices should be received for anthracite at least equal to those paid for domestic sizes of anthracite.

A number of the larger anthracite companies have done much experimental work to develop the most economic method of burning anthracite smaller than barley size. These experiments have been conducted along the

*Closing half of article presented before the American Institute of Mining and Metallurgical Engineers, Sept. 12, at its meeting at Wilkes-Barre, Pa., and entitled "Slush Problem in Anthracite Preparation." The early half of the same article appeared in last week's *Coal Age* and was entitled "How to Recover Four Million Tons of Usable Coal from the Slush Made at Anthracite Breakers."

†See *Coal Age*, Aug. 25, 1921—"Anthracite: A New Domestic and Metallurgical Fuel Made by Coking Anthracite Fines with Coal-Tar Pitch," by Donald Markle.

following lines: (1) Hand firing, (2) firing on Coxe stokers, (3) hand and stoker firing with mixtures of bituminous coal, (4) pulverizing and burning in suspension.

Hand Firing—One of the large companies in the Wyoming field has experimented extensively with hand firing of coal from slush but has abandoned the idea in favor of stoker firing because of the labor problem involved. Stationary grates of the pinhole type and about 4 per cent space were used.

Mixing the coal from slush with barley size reduces the labor problem somewhat and increases the capacity and economy of the boiler. The tests recorded in Table II were run on a mixture of one-third barley and two-thirds coal of $\frac{3}{4}$ -in. mesh.

TABLE II. SIZE OF FUEL HAND-FIRED AND RESULTS

Size	Per Cent	Boiler No. 7	Boiler No. 8
On $\frac{1}{8}$ in. round mesh.....	2		
On $\frac{1}{4}$ in. round mesh.....	17		
On $\frac{3}{8}$ in. round mesh.....	25		
On $\frac{1}{2}$ in. round mesh.....	33		
Through $\frac{3}{4}$ in. round mesh.....	67		
Horsepower developed.....	310.7	313.9	
Per cent. rating developed.....	115.0	116.3	
Actual evaporation per pound dry coal fired, lb.....	3.95	4.09	
Equivalent evaporation per pound dry coal fired, lb.....	4.20	4.35	
Heating value per lb. dry coal, B.t.u.....	12,133.0	12,133.0	

The results are about 60 per cent of the performance usual on similar boilers burning barley size hand-fired.

Stoker Firing—A fairly large tonnage of coal finer than barley is used as fuel for Coxe stoker-fired boilers in the Wyoming field. One of the large companies in the field uses coal recovered from slush to the extent of nearly 50 per cent of its boiler-plant fuel. The character of this slush, which it terms No. 2 barley, is shown in Table III.

TABLE III. SIZES AND ANALYSIS OF COAL FIRED BY COXE STOKERS

Size	Per Cent	Analysis as Fired	Per Cent
On 10-mesh ($\frac{1}{8}$ in. round)....	18.30	Moisture.....	10.0
On 20-mesh ($\frac{1}{4}$ in. round)....	69.50	Volatile combustible.....	5.5
On 30-mesh ($\frac{3}{8}$ in. round)....	85.20	Fixed carbon.....	67.2
On 60-mesh.....	94.95	Ash.....	17.3
On 100-mesh.....	98.00		
Through 100-mesh.....	2.00		
		Heating value.....	11,010 B.t.u.

During the year 1920 394,000 tons of No. 2 barley were used by this company for mine fuel. Two of this company's plants use No. 2 barley exclusively and their average performance for the year 1920 was as in Table IV.

TABLE IV. EVAPORATION SECURED FROM NO. 2 BARLEY

	Plant A, Pounds	Plant B, Pounds
Actual evaporation per pound coal, as fired.....	4.74	4.32
Equivalent evaporation per pound coal, as fired.....	5.36
Equivalent evaporation per pound dry coal.....	5.95

These boiler plants are operated with ease at 150 per cent rating for the day period of eight hours. This company used but 8.35 per cent of its total production in 1920 for mine fuel. Coal recovered from slush, No. 2 barley, amounted to 4.10 per cent, leaving a net consumption of commercial sizes for mine fuel of only 4.25 per cent of total production.

Recently tests were made on Coxe stoker-fired two-drum Stirling boilers using fuel recovered from the slush of a breaker situated in the Wyoming field. The fuel was recovered from the slush by Dorr equipment and ran in size from $\frac{3}{4}$ -in. round to 100 mesh, or considerably finer in size than No. 2 barley. The results of tests were as in Table V.

Tests with coal of the same size that had been cleaned on a Diester-Overstrom concentrating table to 17.4 per cent ash failed, as the moisture content was too

TABLE V. RESULTS OF TESTS WITH SLUSH

Builders' rating developed, per cent.....	152.6
Equivalent evaporation per pound of dry coal, lb.....	4.74
Moisture in fuel as fired, per cent.....	12.2
Ash in dry fuel, average, per cent.....	28.80
Heating value of dry fuel, average, B.t.u.....	10,224
Over-all efficiency, per cent.....	44.8

high for proper combustion. The high moisture can be eliminated when the concentrated coal should show better performance than the high-ash coal. The tests on Dorr coal were only preliminary. Tests run during 1918 on a 463-hp. four-drum Stirling boiler equipped with Coxe stoker using bird's-eye and a mixture of half bird's-eye and half Dorr coal gave the results shown in Table VI.

TABLE VI. RESULTS OF TESTS WITH BIRD'S-EYE AND SLUSH

	Half Bird's-Eye and Dorr Coal	Bird's-Eye
Builders' rating developed, per cent.....	139.4	180.1
Equivalent evaporation per pound dry coal, lb.....	6.19	7.61
Over-all efficiency, per cent.....	52.16	61.83
Efficiency of boiler and furnace, per cent.....	62.74	67.37
Efficiency of grate, per cent.....	83.14	91.87
Combustible in ashes and refuse, per cent.....	17.51	21.47
Coal size test, on $\frac{1}{8}$ in. round screen, per cent.....	2.8	6.6
On $\frac{1}{4}$ in. round screen, per cent.....	51.1	92.8
Through $\frac{3}{4}$ in. round screen, per cent.....	48.9	7.2
Moisture in coal as fired, per cent.....	9.60	9.12
Ash in dry coal, per cent.....	21.12	18.26

The quality of the Dorr coal used in the mixture was as in Table VII.

TABLE VII. CHARACTER OF SLUSH

	Per Cent
On $\frac{1}{8}$ in. round mesh.....	2.6
On $\frac{1}{4}$ in. round mesh.....	9.4
On 60-mesh.....	69.2
On 200-mesh.....	94.8
Through 200-mesh.....	5.2
Ash in dry coal.....	25.0

Slush Coal Mixed with Bituminous Coal—During the war period large tonnages of anthracite culm and slush were shipped to industrial plants for mixing with soft coal. As the anthracite usually contained considerable refuse and mud and the mixing often was not well done, the best results were not obtained. However, a number of plants operated fairly satisfactorily with this mixture. The results of tests on hand-fired four-drum Stirling boilers of 400-hp. rating using various mixtures of slush and soft coal were as in Table VIII.

TABLE VIII. PERCENTAGES OF SOFT COAL, SIZE OF SLUSH AND RESULTS

	10.7	18.9	26.2
Proportion of soft coal, per cent.....	10.7	18.9	26.2
Size of slush, on $\frac{1}{8}$ in. round mesh, per cent.....	4.8	9.0	7.3
On $\frac{1}{4}$ in. round mesh, per cent.....	41.8	47.4	48.4
Through $\frac{3}{4}$ in. round mesh, per cent.....	58.2	52.6	51.6
Builders' rating developed, per cent.....	117.8	118.6	127.5
Equivalent evaporation per pound dry coal, lb.....	6.95	7.57	7.95
Ash in dry coal, per cent.....	23.45	16.99	18.65
Fuel cost per 1,000 lb. equivalent steam, cents.....	13.94	13.51	13.48

Pulverized Slush—Burning of slush in a pulverized state has engaged the attention of a number of investigators and at least two of the important anthracite companies have made extended tests on a commercial scale. The most successful work has been done by the Susquehanna Collieries Co., which has been operating two plants—one at Lykens and the other near Minersville—for some time. The installation at Lykens has been quite successful, as shown by the results reported by J. R. Wyllie, Jr.,* Table IX

TABLE IX. ANALYSIS OF PULVERIZED SLUSH AND RESULTS

	Average	Maximum
Moisture, per cent.....	0.53	0.78
Volatile matter, per cent.....	8.61	9.34
Fixed carbon, per cent.....	78.70	79.85
Ash, per cent.....	12.16	13.47
Heating value per pound, dry, B.t.u.....	13,270.0	13,509.0
Pulverized through 100-mesh, per cent.....	95.27	97.00
Pulverized through 200-mesh, per cent.....	82.78	86.73
Builders' rating developed, per cent.....	143.8	228.6
Equivalent evaporation per pound of dry fuel, lb.....	9.12	10.50
Over-all efficiency, per cent.....	66.7	77.7

Mr. Wyllie points out that improvements made while the tests were being run added greatly to the efficiency

* Journal Engineers Club of Philadelphia (Feb., 1921).

and capacity obtained, so that the maximum results shown are more nearly representative of the results they are now regularly getting.

Lykens slush is peculiarly adapted to burning pulverized because of its high volatile content, low ash and friable nature. Most anthracite slush, however, carries one-half the volatile matter, is much harder, and, unless purified by concentration, carries over double the ash content. The slush at the Susquehanna's Lytle colliery, near Minersville, is a good example of the average anthracite slush, and here difficulty was at first experienced. After some experimentation all combustion and boiler-operating difficulties were overcome, but the pulverizing problem proved less easy of solution.

Recent operation with a Hardinge mill indicates that the pulverization of anthracite slush has been put on a practical and economical basis. Good capacity has been obtained and power, supplies and maintenance costs are well within the margin allowable. As an additional improvement in the preparation of the slush for pulverized use Deister-Overstrom concentrating tables have been installed at Lytle colliery to remove the refuse and so reduce pulverizing costs.

It is estimated that about 12 per cent of total anthracite production, or approximately 9,500,000 tons, is used yearly for mine fuel. It is probable that the average efficiency of the boilers in use is 50 per cent. With the use of pulverized coal this efficiency can be raised to 70 per cent, and thus reduce the tonnage of steam coal required to 6,800,000 tons annually. Nearly two-thirds of this tonnage, or 4,000,000 tons,

can be recovered from slush, so that a total annual saving of 6,700,000 tons is possible. The coal saved would be mostly barley and rice sizes and would have an average value of about \$1.75 per ton, making the money saving more than \$10,000,000 annually. With the return of normal industrial conditions and because of the better demand for rice and barley sizes that have been concentrated to a uniformly low-ash content, little difficulty should be experienced in selling this extra tonnage of steam sizes.

Conclusions—(1) Anthracite breaker slush aggregates annually about 9,500,000 tons of total solids of which 4,000,000 tons are recoverable with an ash content of 15 per cent. (2) Cost of recovering the usable coal in slush will average 15c. to 20c. per ton of the dry product. (3) If the recoverable coal in slush is converted into domestic fuel it will add 9 per cent to present domestic shipments of anthracite. (4) If the recoverable coal in slush is used pulverized in mine boiler plants it will produce 59 per cent of the power required to operate the mines and make available for other purposes about 5,600,000 tons annually of barley and rice coal now so used. (5) Complete prevention of pollution can be accomplished at a cost, except under usual conditions, of from 1c. to 2c. per ton of breaker shipments, provided no value is placed on the recovered coal. (6) If the recoverable coal in slush is valued at not more than 35c. per ton, such value will pay the cost of recovery and also the cost of preventing stream pollution by the remaining slush solids that at present have no commercial value.

Heavy Cover and Need for Quick Tonnage Determine Underground Methods at Lynch Mine*

Half the Rooms Will Be Driven Advancing, Half Retreating—Cover in Places Already Over 1,500 Ft.—Mine Car, 22 In. High, Clear of Rail and Yet Holds Three Tons

BY HOWARD N. EAVENSON†
Pittsburgh, Pa.

TO DEVELOP the mines quickly and to permit of the production of coal while the permanent plant was under construction, headings (Fig. 1) were started from the outcrop and temporary tram-roads were built along the hillsides connecting them, allowing the shipment of coal from three temporary dumping platforms. As the capacity grew a large wooden tippie was built across the hollow just below the site where the permanent tippie now stands, and gradually the shipment of coal, with the exception of that from two of the headings, was concentrated at that point. Before the permanent tippie was completed, shipments over this temporary structure exceeded 100,000 tons per month.

The permanent mine mouths were the last openings that were started, and in each case a slide was encountered, which necessitated some heavy steam-shovel excavation. Coal from both drifts, however, was

shipped over the large temporary tippie, and before the permanent structure was completed the haulage roads had been made ready for operation, so that coal from all parts of the mine could reach the two main mine mouths.

The mines are laid out on a compromise between the advancing robbing system and operation on the retreat. Principal headings are driven so far apart that between them there is room for four rooms end to end. These headings have an empty and a loaded track and two airways and they will be driven up to the boundary without turning a room. They will be flanked by barrier pillars so wide that a full-length room may be driven in the distance across them, but the heading pillars will be left unworked till the boundary is reached, when rooms will be driven into them and the pillars brought back on the retreat. In the drawing these pillars are noted as the barrier section.

Between two principal headings are, of course, two barrier sections, leaving two other sections each as wide as a room is long. These are used to maintain tonnage till the barrier is reached. Two room headings are driven and each removes what is marked as a room

*Second part of article on "Lynch Plant of the United States Coal & Coke Co.," read before the American Institute of Mining and Metallurgical Engineers at its Wilkes-Barre meeting, Sept. 12-15. The first part of the article appeared last week under the title "An 8,000-Ton Tippie with a 5,000-Ton Storage Bin for Coking Coal Erected at Lynch, Ky."

†Consulting engineer.

section. The coal from these sections is won entirely on the advance.

Some of the principal headings will be three miles long. By the system described a uniform output can be maintained from any section till it is about to be abandoned. Each section will give at least 1,000 tons per day, and five of them are intended to be under development in each mine at the same time, to maintain the desired output and to be ready for a reasonable increase.

Headings are driven about 12 ft. wide, with ample clearance on each side of the car for safety, and on 60 ft. centers. Airways usually are 18 to 20 ft. wide. Rooms usually are 36 ft. from rib to rib, and their distance, center to center, varies from 80 ft. under light cover to 120 ft. under the main mountain. It will be noted in Fig. 1 that mining is now being done under 1,500 ft. of cover.

Shortwall machines cut the coal on the bottom. Gathering is done partly by ponies and, where the coal is too low for this, by storage-battery locomotives. In the early workings many local dips were encountered and a large number of electric room hoists are used to pull the cars from such places.

Within the mines four inside substations, each of 200-kw. capacity, have been installed. On account of the heavy cover and the expense of boreholes from the surface to the mines and of the difficult and expensive pole-line construction it was found cheaper to transmit the current in the mine by cables. The size of wires depends, of course, on the load and distance, and they are installed as three-conductor cables with heavy rubber and braid insulation, designed for a working pressure of 13,000 volts.

These cables are placed in 3- or 4-in. fiber conduits which are laid along the side of the heading and are surrounded by concrete with a minimum thickness of 3 in. The telephone lines are laid in a smaller conduit placed near the power line and embedded in the same block of concrete. The substation rooms are of fireproof construction—of reinforced concrete and steel—and are placed at the side of a main heading and with a connection to an air course, so that a circulation of air can be maintained through them. They are all equipped with automatic reclosing circuit breakers. The direct current is transmitted from the rotary converters by 500,000-circ.mil. bare feeders and 0000 trolley wires, the feed cables being of such length that the voltage will not drop more than 50 volts when the locomotives operating in that section are taking a full load.

All haulage headings have at least 5 ft. clearance from the top of the rail. Main headings are laid with 60-lb. rails, room headings with 40-lb.; 20-lb. rails are used in the rooms. On all haulage tracks both rails are electrically welded at the joint to make a good conducting path for the

return current. No separate manways are provided, as the haulage roads have at least 3 ft. clearance between the side of the heading and the side of the cars, have ample headroom, and are lighted by 40-watt lamps at intervals not exceeding 125 ft.

The track gage in all the company's mines in the Pocahontas field is 48 in., and as this has given satisfaction there was no reason to change it in the Lynch mine, especially as some of the mine cars from the Gary mines were to be used there until permanent equipment was installed. Much thought was given to the mine car to be used, as it was desired that this should have a capacity of at least three net tons and should be as low as possible. Experience has shown that a solid-end car is much more serviceable and has much less cost of upkeep than an end-gate car, for which reason rotary dumps were installed. Some years previous, in some mines in which several of the officials had been interested, a steel car having the bottom of the car under the axles had been fairly satisfactory. The weaknesses in this design were studied and the style of the car changed to adapt it for roller bearings, which were placed in self-aligning cast-steel boxes. The car shown in Fig. 2 is the result. It stands about 22 in. above the top of the rail and the motion required to throw the coal into the car is sufficient to raise it over the side, so that no actual lifting of the coal beyond this is necessary. The wheel base was made 48 in. in order to prevent the long overhang usual in mine cars and to insure a steadier running car, and the change has afforded that result.

As is usual with steel cars when first put on the

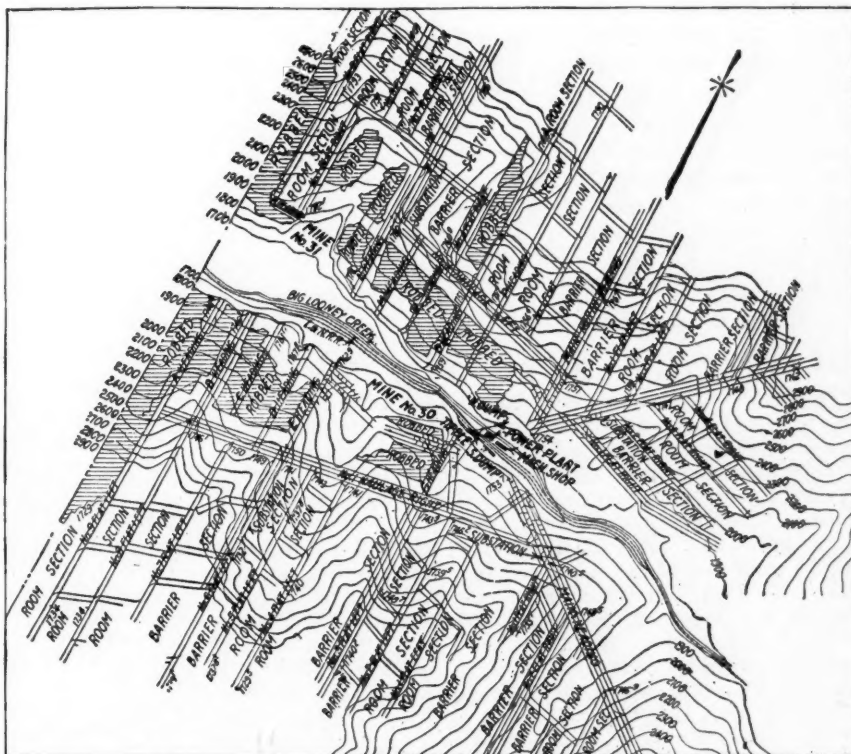


FIG. 1. LYNCH MINE MAP SHOWING MINING METHODS AND SURFACE CONTOURS

In order to make speedy progress a great number of headings were driven into the hill and connected in conformity with the general plan of development. The mines are laid out with principal entries more than four room-lengths apart. Two entries are driven in between and rooms driven on both, the pillars being robbed as the rooms are completed. These interior entries are so disposed that the principal entries have an undeveloped pillar on either side as wide as a room is long. On the boundary being reached these pillars can be worked by driving rooms in them, starting at the far end and drawing the pillars on the retreat.

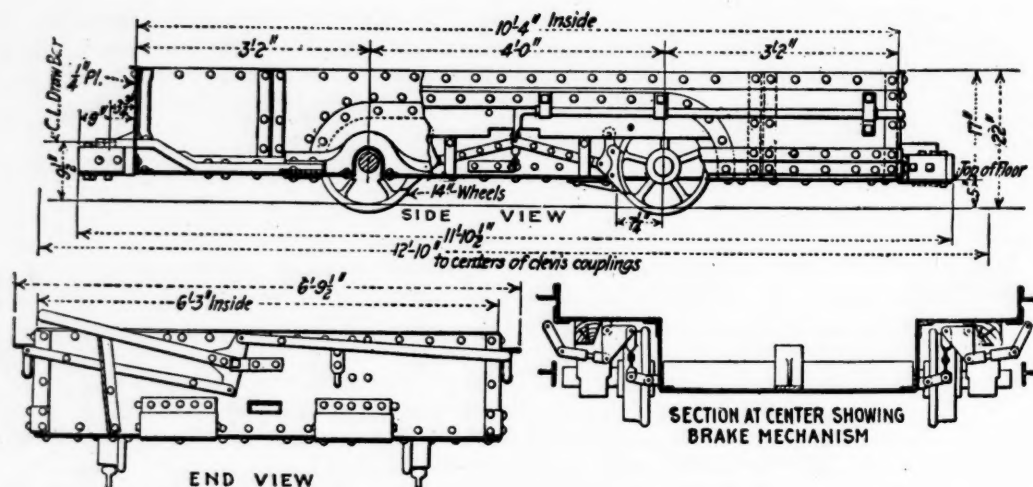


FIG. 2.

Steel Mine Car

A car without an end gate, with every cubic inch of space utilized, 22 in. high yet holding three tons.

track, they were quite stiff and gave much trouble, as they were apt to jump the track, but after the first week's run this trouble disappeared and the cars have been very satisfactory. The first axles were made of nickel steel with a hardness of 250 Brinnell, but the later ones were made of open-hearth steel forgings, heat-treated to give the same hardness. The wheels are pressed on the axle; cast-iron rolled-steel and cast-steel wheels have been used, depending on the material available at various times during the war, and both have given satisfaction.

The boxes are greased every six months, a slow semi-fluid grease being used for this purpose. Greasing is best accomplished by connecting a compressed-air hose to the end of the grease gun. When the end of the gun has been inserted in the bearing, the air pressure is turned on, the old grease is forced out and the new put in place instantly. The bodies for the first 500 cars were purchased, the trucks being assembled at the works, but the remaining 1,200 cars were built complete at the shop at Lynch.

On account of the isolated location of the plant, ample repair facilities for all types of machinery used were absolutely imperative. The repair shop was the first building designed and built. It is of steel and glass construction, with structolite roof slabs covered

by asbestos sheet roofing. It has a 5-ton traveling crane, four forges, a large bulldozer, steam hammer, cutoff saw, punch and shear, wheel press, boring mill, drill press, two lathes and the necessary grinding machines, air hammers, tools, etc. Almost any repair can be made to any of the machinery used and armatures for any of the motors can be rewound. Brass castings and any small brass parts for mining machines and locomotives are also made.

The two fans are duplicates, each being primarily blowing but set to be reversible, and having a capacity of 300,000 cu.ft. per minute against a mine resistance of 3-in. water gage. They are set at right angles to the mine mouth. The ducts leading to the mines are parts of headings which open to the surface and these are closed at their mouths by explosion doors.

The fans are driven by slip-ring 440-volt alternating-current motors through spur-gear speed reducers. These reducers are large enough to develop the full capacity of the fan, but the motors are smaller and of lower speed than will ultimately be required. When the mine requires larger motors the present ones will be used as spares for the tippie. As the ratio of the speed reducer is fixed the fan will be driven faster. The fan settings and buildings are, of course, entirely fireproof, of concrete and steel.

No Evidence to Connect Death with Mines

FINDING the connection between the death of Onofrey and his employment in the mines too tenuous for a grant of compensation, the State Compensation Board of Pennsylvania has disallowed compensation to Eva Onofrey, of Glen Lyon, Pa., in her case against the Susquehanna Collieries Co., of Wilkes-Barre, Pa.

Commissioner Benjamin Jarrett in writing the opinion stated that the board had awarded compensation in this case, but that the Court of Common Pleas of Luzerne County had returned the record to the board for further hearing and determination, declaring that the board had erred in awarding compensation upon hearsay evidence. A hearing was held and the testimony established but one additional fact and that was that the wound on the back of the decedent's head was inflicted before death and not after death, as had been testified to at the original hearing.

Following the law as laid down by President Judge Fuller in his opinion in this case, the commissioner holds that this fact does not strengthen the position of the claimant for the reason that it is not convincing that the wound was inflicted while the decedent was in the course of his employment.

The board in its opinion states that if no other logical conclusion could be drawn than that the wound was suffered as a result of an accident while in the course of Onofrey's

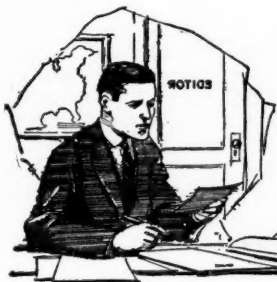
employment, the board would then be in a position to allow compensation, but here, it is pointed out, the decedent could have been attacked with the meningitis of which he died, at his work, yet sustained the fall which caused the wound while off the premises of the defendant.

The claimant in the case is the widow for herself and her three children, and the deceased employee was engaged as a pump runner by the defendant company in Colliery No. 6 of the company at Nanticoke.

WITH CONFERENCES IN PROGRESS between the Secretary of War and the engineers in the employ of Henry Ford in regard to the acquisition of the Muscle Shoals water power and the government's nitrate plants, it is believed that a definite pronouncement of the administration's policy in this particular may be expected in the near future. Since the disposal of Muscle Shoals would involve legislation no final solution of the matter can be expected for some time to come.

IRA C. COCHRAN, THE NEW TRAFFIC MANAGER of the American Wholesale Coal Association, assumed his duties Sept. 15. His headquarters will be at the association's offices in the Woodward Building, Washington, D. C.

BUSINESS WILL PUT AWAY encouraging profits when it puts away discouraging prophets—*Asheville Citizen*.



Problems of Operating Men

Edited by
James T. Beard



Ventilating Engineer vs. Mine Foreman

Efficient Ventilation Chief Among Three Essentials in Successful Mine Operation—Mine Foreman Should Have Full Charge and Direction of All Matters Pertaining to the Ventilation of a Mine

AFTER reading with care the interesting letters of Henry Bock, *Coal Age*, Apr. 28, p. 755, and that of a Pennsylvania mine foreman, in the issue July 7, p. 18, both of whom urge efficient ventilation of mines, I am forced to take exception to their suggestion of the need of a ventilating engineer.

We all agree that the ventilation of a mine is a most important factor in its successful operation. In my opinion, there are three essential factors in this regard, namely, ventilation, drainage and haulage; but ventilation I regard as the most important of the three.

My experience as a mine foreman convinces me that the foreman should have the full control of everything pertaining to the ventilation of the mine. I can see no need of a ventilating engineer; but consider that he would be an obstruction rather than a help, in making the mine healthful and safe.

The mine foreman who is not capable of arranging the ventilating system and directing the air current throughout the mine, in a manner to give the best results, is not a capable man and is practically unfit for the position he holds.

Let me assume that a foreman is in charge of a Class-A mine, here in Tennessee. Such a mine is generating marsh gas, which forms firedamp when it has mixed with the air current. We will say that the company has employed a ventilating engineer charged with the duty of arranging the ventilating system and distributing the air at the working faces throughout the mine.

WHERE DOES RESPONSIBILITY REST WHEN AN ACCIDENT OCCURS

Suppose, now, an explosion occurs in that mine and several men are killed and others are burned. Who is the responsible party and the one to be blamed for the occurrence? Is it the mine foreman, who was in the mine at the time and in charge of the work? Or, is the ventilating engineer, who was at work on plans in his office, the one to be held responsible for the disaster?

Few will deny that there is every chance for argument, in such an event. The ventilating engineer will contend that the mine foreman, perhaps, failed to follow his instructions, which would be hard to prove. On the other hand, the foreman will dispute the claims of

the engineer and say that proper provision was not made for conditions over which he had no personal control.

Had the mine foreman, in the case just mentioned, not been handicapped by the authority of the ventilating engineer, he could probably have taken measures to improve the ventilation to meet the conditions that arose suddenly in one section of the mine. Although the foreman took every precaution and, perhaps, notified the engineer of approaching danger, the remedy came too late.

It must be admitted that the man who is constantly on the ground is in a better position to combat danger and provide against possible disaster, than the man who makes only occasional visits to the mine. If the foreman must ask the permission of an engineer, before he can make any necessary changes to improve a condition that has developed in a certain section, the delay caused may be fatal. At the time, he may not be able to locate the engineer or the desired permission may not be granted at once.

ANOTHER HANDICAP TO A PRACTICAL FOREMAN

In the letter last named, page 18, reference was made to the handicap of a foreman who is obliged to work under the instructions of a superintendent who has no practical experience underground. This reminds me of such an instance that occurred not long ago in a mine in this locality.

In that mine the foreman was a practical man who understood mining in all its branches, while the superintendent had no mining experience. The day for measuring up yardage in the mine came and the foreman went to the superintendent's office and asked for a tape for that purpose. This was refused and he was told to get a yardstick from the store. The foreman went out remarking that he would get a grapevine from the woods and make his measurements with that.

No practical miner will deny that a man having charge of underground work must understand what it means to clean up airways, rebuild stoppings, repair doors and overcasts and timber airways and travelingways, besides many other things requiring attention in the mine.

Speaking of superintendents and mine foremen, it is my opinion that any certified foreman who accepts a position under an inexperienced superintendent makes his first great mistake. My conviction is that all mine superintendents should be experienced mining men and hold first-class mine-foreman certificates. Their knowledge of underground work should be even greater than that of the foreman with whom they must co-operate, in making the mine healthful and safe.

Crawford, Tenn. OSCAR H. JONES.

Miner in Twenty-Seven Days

Skillful mining of coal requires experience—Must work as laborer before one can mine coal—Strength, muscle and skill required—Good miners physically fit.

SOME time ago I remember reading [*Coal Age*, vol. 18, p. 856] a letter in which the writer stated that on visiting a certain mine he entered a miner's place that was better kept and better timbered than he had seen for a long time and yet the man had only been a miner for twenty-seven days.

It is no wonder the writer was surprised, as he might well be on learning this fact. In Canada, a man is not permitted to have charge of a place or work as a miner, until he has been employed as a mine laborer underground for at least a year.

No man coming from the farm or the shop can go into a mine and dig coal safely or well. Before he can mine or shoot coal he must learn how to handle a pick, set a boring machine, drill and charge a hole, set timbers and do other work required of the miner.

On this side of the Atlantic, it would seem that a man can become a premier, president or other high official in little or no time. But, let me say, the foreman who would give a man charge of a place and allow him to dig coal when he has had but twenty-seven days' experience in mines is not a fit foreman. The honorable calling of a miner is brought pretty low when a miner of twenty-seven days' experience is said to have the best kept place in the mine.

It is a mistake to regard the work of mining coal as a mean occupation when, in truth, it requires intelligence and skill. Seldom do we hear a miner praised for his work. As a class, miners are more generous in their opinions of their bosses than the bosses are of them. It is not often that a good miner speaks ill of his boss.

In my estimation, miners are as good as their bosses and the bosses, likewise,

as good as the miners who work under them. It is true that some miners have a lot to learn, while it is also true that some bosses do not know as much as they think they know. We used to say of a boss whom I worked under some time ago, "Archie was a poor miner, but he makes no a bad boss."

On another occasion some time since, I was continually plagued by a boss who blamed me, saying, my road was not straight. The fact of the matter was, none of the roads in that mine were straight, as no sights were given and each miner was obliged to trail the next adjoining place to keep the right pillar.

If a man starts work in a mine where the coal is cut by machine and shot-firers are employed to blast it down, he has little difficulty in making a good record at loading, even though he has had no previous experience in mining coal. It does not follow, however, that the man is a miner; he may never have been in a mine before in his life.

At the present time, many men are entering our mines direct from the farm. If they chance to get a good place where the roof is good and the coal mines easily everything may go well for a time. But, put such a green hand in a place where skill is required and is more important even than brute strength, and his limited knowledge of mining is at once apparent.

As a class, miners are the most physically-fit men in any industry. Being a miner from my youth, I would say it is not much of a trade, but the work requires skill and experience. After mining coal in Pennsylvania, Missouri, Iowa, Kansas and other places, my conviction is that the man who has not learned the trade does not know the right way to dull a pick. That knowledge comes only from experience.

River Herbert West, "MAC."
N. S. Canada.

College Men as Mine Superintendents

College men must have practical experience to make capable mine superintendents—Should pass examination and hold certificate, before they are fitted to judge the qualifications of mine foremen.

ATTENTION is drawn by one writer, in a discussion regarding the certification of mine officials, *Coal Age*, Aug. 4, p. 181, to the capability of college men to take charge of mines. Reference is made to college men as having spent years in acquiring a knowledge of coal mining that renders them capable of handling the larger problems that confront mine superintendents.

In this discussion, writers have referred to that change in the Pennsylvania law that permits the superintendent or operator of a mine to employ uncertified mine foremen and assistant foremen. In my opinion, if that law is to remain, another law should be passed requiring the examination and certification of the men who are thus author-

ized to pass on the qualifications of those they employ.

Before an operator or a superintendent can properly judge of the fitness of a man whom it is desired to place in charge of a mine as foreman, he must himself possess the practical knowledge that would enable him to plan and lay out a mine under the many varied conditions of hard top and soft bottom, steep pitches, slips and faults and the presence of gas and water, which often make the mining of coal a difficult and dangerous problem.

GRADUATE MINING ENGINEER AS MINE SUPERINTENDENT

It is not my intention to belittle the college man, or to underestimate the value of a theoretical knowledge of coal mining. But, the fact that one is a college man does not signify that he is qualified for the position of mine superintendent. He may have a thorough knowledge of the principles of mining and yet know nothing of the practical side. That he must learn by actual experience underground.

To illustrate the meaning of my remarks, let me cite an instance of my own observation that occurred some ten years ago. At that time, a gentleman visiting the mine of which I had charge narrated to me his own experience on assuming a position as mine superintendent after leaving college.

He stated frankly that he was a graduate mining engineer, having spent seven years of his life and more than \$7,000 in acquiring his education. At the time he took charge as superintendent of the mine, he had been employed as mine engineer, for six months previous to being promoted to the higher position.

FIRST ACT AS SUPERINTENDENT

He stated that his first act as superintendent was to issue orders to the mine foreman and master mechanic that they were to do nothing except on orders from himself, adding that he wished to assume complete control and be responsible for all that was done in and around the mine. From that time, the orders of the new superintendent were carried out to the letter and nothing was done except by his direction.

In telling his story, the gentleman stated that the mine had always had a splendid output, but this decreased, month by month, after he had taken charge. At the end of the third month, the falling off in tonnage had become so great that he became alarmed and, calling to his office the mine foreman and master mechanic, he told them that, hereafter, they were to go ahead and run the mine as they had done before he took charge.

It was not long after this that he, realizing his own unfitness for the position he held, resigned his office and accepted another position in which he traveled about, visiting coal mines in many districts. He said, shortly after he left the company, operations at the mine became normal and the place resumed its former tonnage record.

The man blamed nobody but himself. He stated his present work was bringing him into close contact with practical men and he was learning much that he never knew before. Since then I have lost track of the man; but I believe he was of that type that would eventually make good.

In closing, let me say again that a knowledge of the theory and principles of mining is important; but practical experience, gained through good old hard knocks in the mine, is necessary for the making of a mine superintendent. The man chosen for that position should be required to prove his knowledge and fitness by going before an examining board. There is no better man than the college man, after he has gained this practical knowledge, and he should not think himself too big to submit to examination and certification by a board.

GRIFF GRIFFITH.

Stoyestown, Pa.

Self-Examination in Foremen

Mine foremen not behind bosses in other industries—Qualities that make men leaders—Handicap of early training—Questions for self-examination.

DISCUSSION in *Coal Age* of the personality of the ideal mine foreman has shown that everything depends on the intelligence and untiring efforts of the man in charge. Although I believe there are as many good mine bosses as there are bosses in other industries, it would seem hard at times to pick ten, from a hundred of these men, who are thoroughly competent in their line.

This remark should make mine foremen feel that they are not the only ones holding official positions who lack the qualities and training that fit them for obtaining the highest results. Neither does it excuse any mine foreman from making every possible effort to increase his capability and efficiency.

One can readily understand why some writers are inclined to say that too much is expected of the man in charge. To my mind, however, there is hardly any limit to what can be accomplished by a mine foreman, or any other boss, who is enthusiastic concerning his work. It is remarkable to observe the quantity and quality of work that can be produced by the proper training of one's self for increased efficiency.

QUALITIES THAT MAKE LEADERS

Numerous qualities mark the man who is capable of leadership; but probably the greatest of these qualities are the ability to not worry over what cannot be helped and the ease with which one receives criticisms of his doings. Another important quality is a calm, deliberate judgment that enables one to reach right conclusions.

A man's early training often proves a handicap in later life. At home, he was made to believe there never was or ever could be anything quite so perfect as "mother's boy." When one has once put from him that false idea and stepped out into the great unknown fu-

ture, he has taken the first step toward knowing himself and is ready for doing something worth while.

By way of illustration, let me refer to a certain really big man in the coal business, who employs 300 foremen and assistants. It was only the other day I heard him remark that, from a hundred foremen, he could never pick more than ten men whom he could not replace without difficulty; and not more than five of the ten would be capable of making mine superintendents.

SOMETHING TO THINK ABOUT

While this is but one man's opinion, it gives us something to think about. We realize that until we can make the man who is to judge our capabilities believe that we have qualities not to be found in other men, we had better get busy and do something that will develop in us the qualities that are sought after and desired in every mine official and which make for the building up of a strong organization.

Does any foreman doubt for a moment that a little self-inspection of his own stock-in-trade; in other words an honest self-examination of one's own qualities will be of greater assistance in enabling him to classify himself properly in the list of mine foremen who are eligible for promotion.

Let every foreman ask himself such questions as the following and see if he can give an affirmative answer to each:

SELF-EXAMINATION

Can I get a satisfactory air measurement at every last breakthrough in the

mine? Are the working places properly posted and inspected regularly, while the men are at work? Is my daily examination of the workings such as to discover unsafe practices of miners? Am I doing everything possible to bring the men to a better understanding of their duties and responsibilities in the loading of clean coal and upkeep of their places?

Do I assume my own share of the blame for accidents or mistakes made in the mine, or has it been my habit to pass the buck over onto other shoulders? Do I make promises that I know cannot be kept? Is my treatment of the men and my assistants such as to secure their respect and confidence? What is my record as a tonnage producer, as compared with providing better working conditions?

What is the condition of the mine, in respect to the upkeep of haulage roads, travelingways and airways? Has this work been put off for the purpose of reducing the daily cost-sheet, without due regard to future developments and the safety of employees? Does the safety of each mine worker appeal to me as strongly as that of my own son?

Finally, do I look forward with expectancy to the coming of my weekly mining journal? Do I desire to educate and keep myself up-to-date in mining methods and equipment? Am I doing all in that line I can for the education of the men? The foreman that can answer such questions as these with an honest "Yes" is ready for promotion.

Pikeville, Ky. GEORGE EDWARDS.

Inquiries Of General Interest

Measuring Gas at Face of Heading

Common Practice of Estimating Amount of Gas in Feet or Inches Below the Roof Gives Wrong Idea of Actual Conditions.—Volume of Gas Accumulated in a Place Not to Be Measured in That Way

WE HAVE been having an argument in regard to the correct answer to be given to a question asking for the volume of gas found in a heading 12 ft. wide and rising on a grade of 6 per cent. A test with the lamp showed gas at a depth of 3 ft. below the roof, a few feet from the face. Not being able to agree in this matter, we have decided to submit the question to *Coal Age* and ask for its solution.

Zeigler, Ill.

FIREBOSS.

The common practice among firebosses of estimating the volume of gas present at the face of a heading or room, by measuring the depth below the roof at which the first appearance of a cap is observed is very misleading and far from giving any reliable result as

to the actual volume of gas in the place.

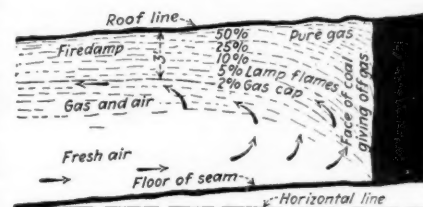
First, the approach of a fireboss to the face of a heading or other working place, however cautiously made, cannot fail to disturb the gas accumulated there and streaming out along the roof in a thin layer. A test may then show a gas cap anywhere from a few inches to two or three feet below the roof-line, according to the distance from the face where the test is made, the quantity of gas generated and the extent to which it has been disturbed.

In order to make the situation more clear, we have prepared the accompanying figure, which shows the face of a heading rising on a slight grade and in which gas is being given off from the exposed surface of the coal. As indicated by the light dotted lines, the gas

issuing from the pores of the coal rises and flows along the roof in more or less definite stream lines, while fresh air indicated by the arrows flows in along the floor.

As diffusion takes place and the air mixes with the gas, there are formed layers of gas-charged air, the percentage of gas increasing as it approaches the roof, while a body of more or less pure gas may exist in the far upper corner close to the roof and the face of coal.

It is evident that the custom of estimating the volume of gas present by the distance a flame cap is observed below the roof must give very uncertain



GAS AT FACE OF HEADING

results, for the reasons previously stated and because different firebosses do not have the same ability to detect a flame cap in their lamp. Moreover, the observed depth of the gas below the roof will decrease rapidly as one recedes from the face, owing chiefly to its diffusion into the air current.

The question asked in this inquiry is one that is frequently given in a firebosses' examination. It is of little practical value, its answer giving only a suggestion of the relative amount of gas in the place. For instance, if a fireboss reports 3 ft. of gas, as in this case, it is known there is a larger volume present than if he reported but a few inches.

Regarding the correct answer to be given to the question asked, the probable intention is to calculate the volume of a wedge, 12 ft. wide and 3 ft. thick at its base, and having a length estimated from the six per cent grade of the seam, assuming for that purpose that the lower surface of the gas, or the gas line is level and the gas tails out in the shape of a wedge.

On this basis, the volume of gas present, calculated as being the volume of a wedge whose base is 3 x 12 ft. and its length $3 \times 100 \div 6 = 50$ ft., is $\frac{1}{2}(3 \times 12 \times 50) = 900$ cu.ft.

Physical Defect in Mine Official

Failure to detect odors in mines a hindrance to a mine official. Attention to such defect in a candidate should be given by all examining boards.

FOR some time past, I have been wondering whether a man is fit to serve in an official capacity in a mine if, through a physical defect, he is unable to detect odors. For instance, I once knew a man who could not tell a perfume bottle from a rotten egg placed under his nose when he was blindfolded.

The question in my mind is, Would such a defect debar a man from obtaining a certificate of competency to act as fireboss in a mine; or, for that matter, would such a person be fit to serve as a mine foreman or assistant foreman? I have never heard of an examining board applying such a test to candidates, however.

INQUIRER.

Thompson, Pa.

There is great need of a man who acts in an official capacity underground being able to detect an odor. A man who cannot smell would be unable to detect the peculiar odor given off by a gob

fire. Neither would he be warned of a more active combustion taking place in some portion of the mine from which the odor is borne to him on the air current.

There is every need for a foreman or an assistant foreman and, more particularly, a fireboss having the faculty of smelling unimpaired. In our opinion, attention should be given to this matter in the examination of men who are to have charge of work underground. A man who does not possess the ability to smell faint odors is hardly fit to act in an official capacity in the mine, and this would be sufficient reason for withholding a certificate from him.

Examination Questions Answered

Illinois Mine Managers' Examination, Springfield, May 2, 3, 1921

(Selected Questions)

QUESTION—A mine car is 9 ft. long, 4½ ft. wide and 2 ft. high. If 6 in. of topping is allowed, how many cubic feet of coal will it carry?

ANSWER—Allowing for 6 in. of topping makes the depth of the coal in the car 2½ ft. Then, assuming the given length and width are inside measurements, the cubic contents of this car when fully loaded is $9 \times 4\frac{1}{2} \times 2\frac{1}{2} = 101\frac{1}{4}$ cu.ft.

QUESTION—The pump column, in a shaft, is 400 ft. long; the pipe is 12 in. in diameter and full of water. What is the total weight of water, in tons of 2,000 lb.; also, find the pressure of the water, in pounds per square inch, at the base of the pipe?

ANSWER—Since the diameter of the pipe is 12 in., or 1 ft., its sectional area is $0.7854 \times 1^2 = 0.7854$ sq.ft. Its cubic contents is then $400 \times 0.7854 = 314.16$ cu.ft. Taking the weight of water as 62.5 lb. per cu.ft., the total weight of water in the pipe when full is $(314.16 \times 62.5) \div 2,000 = 9.8175$ tons.

Assuming a static condition, or that the pump is not working, the pressure at the bottom of the pipe is $400 \times 0.434 = 173.6$ lb. per sq.in.

QUESTION—In case of accident in which a miner has received a wound severing an artery, what would you do to prevent hemorrhage before a physician arrives?

ANSWER—Apply a bandage or tourniquet over the severed artery between the wound and the heart. A smooth round stone should be placed over the artery under the bandage so that when the latter is tightened the stone will compress the artery and stop the bleeding. Having done this and having sent for a physician, keep the patient in a reclining posture with the head low. See that he is kept warm and quiet

and that he has good air. Give no stimulant unless a very weak condition makes this necessary. A half-teaspoonful of aromatic spirits of ammonia, in a tablespoonful of water, may then be given if the bleeding has been checked.

QUESTION—If 20,000 cu.ft. of air and gas, at its most explosive point, is passing through the mine, what is the quantity of gas given off and what quantity of air should be added to render the mixture non-explosive?

ANSWER—An air current charged with gas to its most explosive point contains 9.46 per cent of gas. The quantity of gas present is, therefore, in this case, $0.0946 \times 20,000 = 1,892$ cu.ft. per min.

The lower explosive point of pure methane and air is reached when the mixture contains 7.14 per cent of gas. Therefore, if 1,892 cu.ft. of gas is 7.14 per cent of the total mixture, the volume of air and gas when explosion ceases, in this case, is $1,892 \div 0.0714 =$ say 26,500 cu.ft. per min. The quantity of air required to be added to produce this condition is therefore $26,500 - 20,000 = 6,500$ cu.ft. per min.

QUESTION—In a certain mine there are two sections ventilated by separate air currents. The combined length of the intake and return airways, in one of these sections, is 6,000 ft.; the number of men employed is 100 and the number of mules is 10. In the other division the length of the airway is 3,000 ft.; the number of men employed is 110 and the number of mules 7. What will be a proper distribution of the air surging through the mine, and what steps must be taken to secure such a distribution?

ANSWER—The Illinois mining law requires at least 100 cu.ft. of air, per man, per min., and 500 cu.ft., per mule, per min. On this basis, there would

be required, in the first section of the mine, 15,000 cu.ft. of air per min., and in the second section 14,500 cu.ft. per min. But, since the longer airway requires the most air, a regulator must be placed in the second section and adjusted to give the desired proportion of air. The law also requires that not more than 100 men shall be employed on a single air split. Therefore, it will be necessary to split the air in the second section where 110 men are employed.

QUESTION—To find the percentage of mine gases given off in a mine, the air at the inlet was measured and found to be 137,500 cu.ft. per min., at a temperature of 51 deg. F. The air at the outlet measured 150,200 cu.ft. per min., at a temperature of 76 deg. F. What is the percentage of mine gases present in the air leaving the mine?

ANSWER—Disregarding the increase of volume on the return airway, by reason of the decrease of pressure due to mine resistance and estimating the increase of volume on the return as only due to the increase in temperature, the increase in volume will be in the ratio of the absolute temperatures. In other words, the volume ratio is equal to the absolute-temperature ratio:

$$\begin{aligned} Q &= \frac{460 + 76}{137,500} = \frac{536}{460 + 51} = \frac{536}{511} \\ Q &= (137,500 \times 536) \div 511 = \\ &144,227 \text{ cu.ft. per min.} \end{aligned}$$

Since the volume of air measured on the return is 150,200 cu.ft. per min., the gas given off in this mine is $150,200 - 144,227 = 5,973$ cu.ft. per min. The percentage of gas in the return current is, therefore, $(5,973 \times 100) \div 150,200 = 3.97$, say 4 per cent.

QUESTION—When do you consider the quantity of air entering the downcast shaft sufficient for the ventilation of the workings?

ANSWER—When the quantity of air passing into a mine is sufficient to comply with the mining law and, assuming that this quantity is properly distributed and conducted throughout the mine, it is sufficient to prevent any accumulations of gas and render the workings healthful and safe.

QUESTION—(a) What is the proportion of marsh gas and air in a fire-damp mixture that will develop the maximum explosive force? (b) What are the limiting proportions that determine an explosive mixture of these gases?

ANSWER—(a) The proportion of pure marsh gas and air under normal conditions that will develop the maximum force, in explosion, occurs when one volume of gas is mixed with 9.57 volumes of air. The mixture then contains 9.46 per cent of gas.

(b) The lower explosive limit of pure marsh gas and air is reached when the proportion of gas to air is 1:13. The mixture then contains 7.14 per cent of gas. The higher explosive limit of this gas and air is reached when the proportion of gas to air is about 1 : 5, or when the mixture contains 16.67 per cent of the gas.

Success or Failure of the Retail Coal Merchant Now Dependent Upon Salesmanship*

Coal Salesman, to Be Competent, Should Be Conversant with Origin, Preparation, Transportation and Character of His Merchandise—Ability to Sell When Consumer Is Reluctant to Buy Is Test of Efficiency

BY D. F. WILLIAMS†

COAL is the basis of all energy and power, the prime mover of the wheels of industry. With coal we have light, strength, power, wealth and civilization. Without coal we have darkness, weakness, poverty and barbarism. The most civilized nations of the world are those consuming the most coal; at the head of these stands the United States.

A study of the history of coal brings home to us the fact that in the early stages the coal man was confronted by the same problems of development, operation and salesmanship as today.

In 1306 we find record of the smoke ordinance promulgated by King Edward I, at the request of Parliament, prohibiting the use of coal in the City of London; and during the thirteenth and fourteenth centuries we find record of the development of the wheelbarrow and the barrow track, the precursor of the present day railroad; of leases requiring that pillars be left in the mines to prevent subsidence of roof; of the transportation of coal from Scotland to London and of its exportation to France; of deeds containing royalty provisions similar to those in the coal deed of today; of governmental investigation of price and restriction of product, and in the sixteenth century, under Queen Elizabeth, a record indicating the awakening of the government to the value of coal for taxation purposes.

CHARLES I A COAL MONOPOLIST

We find the record of the first monopoly when Charles I, not being satisfied with the returns of taxation, exercising the right of pre-emption in the year 1638, took over the sale of all coal, paying to the producer for his product at the rate of 11s. per chaldron.

What apparently is the first record of government-fixed price and of summer discounts is given in this same transaction when the price of coal in London was set at 17s. per chaldron during the summer and 19s. during the winter.

The first coal salesman of whom I can find record is King Henry VIII, who arranged for the sale of 3,000 chaldrons of coal to be forwarded to Boulogne, in France. The period from the time of King Henry VIII to the present day is characterized by increased population, by the concentration of people in

cities and towns, by the depletion of the wood supply and by the displacing of man-power by machinery.

Throughout these centuries history indicates that coal has maintained the position which it then established for itself. It still is a necessity, is taxed to its limit, is the subject of governmental inquiry. It still requires the services of the salesman to arrange its transport from the point of origin to the point of consumption, and it is to the retail dealers of today, the successors of King Henry VIII, that I desire to address the following remarks.

The entire production of anthracite being required to meet the demand,

Belief that salesmen are born, not made, declared to be an error. Success in the retail coal field attainable only through constant study and effort. Careful perusal of trade magazines, including advertising, and application of information thus gained with business experience materially promote progress.

regular movement to point of consumption is the mark of efficiency for the sales organization, and when production is stopped through lack of orders, when it is necessary for the producing companies to store large quantities of coal at the mines, when it is necessary for the retailer to store in such quantity and such manner as to involve additional expense, breakage and wastage, there is need for study of the sales organization.

The time is here when we all must carefully question our salesmanship abilities, must inquire into our local reputations for integrity and fairness and must give some thought to our temperament. The industry, itself, does not want, and cannot afford, to produce business failures, nor can it afford to encourage a business success that is attained through methods derogatory to others engaged in the industry. The anthracite industry does not want, nor can it afford, to rear and encourage weaklings. Weaklings and failures do not contribute to progress.

There is general error in the belief that the salesman is born, not made. Let me bring home to you the thought

that all salesmen started in like position as men babies. It is true that some, because of temperament, of home surroundings, of advantages obtained through wealth or education and refinement of people with whom they were thrown earlier into contact, would seem, when they chose selling as their field in life, to have been born salesmen, and early in their careers their advance was rapid.

HARD WORK VS. NATURAL ADVANTAGES

Others from lowly surroundings, with no advantages of wealth, home surroundings or education, must, of necessity, work hard to absorb the details of salesmanship. The contrast between these two is marked at the start, but the usual result is that the man of natural advantages who has early made great progress soon becomes lazy and slows up, while the man who has struggled to attain the position which he has selected for himself in life, continues to struggle, and sooner or later passes the man of natural ability.

The successful salesman is not born—he becomes what he is through constant study and effort. He reads carefully the trade magazines, even to the advertising, he purchases and studies every book or magazine article that can be found relating to his chosen field, and he applies to his own business the knowledge thus gained, year by year reporting progress.

During the past three or four years our people seem to have forgotten that the object of salesmanship is to sell, and that it is the natural thing for the consumer not to want to buy—not to want to part with his money.

ERA OF ORDER TAKING BEGAN WITH WAR

Since the beginning of the war there has been practically no coal selling in this country. There has been a great deal of order taking—but by order-takers, not salesmen. The order-taker performs his work like a machine. He sells only those sizes of coal asked for by his patrons and his chief thought is to get rid of his customer as quickly as possible. He has no suggestions to make and no advice to give. He knows little about the origin, preparation, transportation or character of the coal he has to sell; in fact, he knows nothing about coal other than price.

During the last few years in the coal trade we have told the buyer what he could have and at what price. Many coal salesmen passed out during the period because the firm could not see

*Address delivered at the convention of the New York State Retail Coal Merchants Association, Richfield Springs, N. Y., Sept. 9, 1921.

†Vice president and general sales agent, Hudson Coal Co.

the need of paying salaries at a time when the books reflected more orders than tonnage. Others were retained, but, because of their failure to realize unusual conditions, did not keep informed as to the changes in the industry and became soft.

The new men taken on since the period of depression came have never known hard selling, so that now, when it is hard to sell, when selling is on a normal basis, when there is need for a display of true salesmanship, the old men do not know how to adjust themselves and the inexperienced man is content to say "There is no business."

MUST ORGANIZE SELLING FORCE

Every retailer is supposedly a salesman—each has the opportunity to control a selling organization. Every clerk, every yardman, every driver in your employ and, I hope, every customer, is a potential salesman—he can aid in pushing up or pulling down your business, and your success is dependent upon your ability to organize this force. It is time for you to acquaint yourself with actual conditions as they exist today and to put into your selling organization that courage, optimism and resourcefulness that are so necessary for present day selling.

We hear people say "I don't know where I am going, but I am on my way." It's high time we found out our destination—found out where we are going. No matter what your direction all people are ready to add momentum to your movement. If you are going up, you will find the populace ready to push—they won't put oil on the upward track. But if you are standing still or if you are going backward, you will find that everyone is willing to give you a push—everything will be greased for the occasion. Human beings are akin to bees in that they have no place, no patience with drones or failures.

How many of you having a business of 5,000 tons or more per annum personally view your orders each and every day and have knowledge of or acquaintanceship with the people doing business through your office? You probably receive a statement showing the number of orders received, the number of deliveries made yesterday, but more than likely do not enter into the personal side of the business in which you are connected.

RETAILER OVERLOOKED OPPORTUNITIES

Recently I had a retail dealer say to me he had made a mistake in purchasing a business in what he regarded to be a small community. He felt that his activities had been restricted through this mistake. Inquiry developed the fact that in his community were five other retail dealers, all doing a fair business, and that the possibilities of the community were five times his tonnage.

It is beyond conception to realize the make-up of the man who will "lay-down" under such circumstances. It is a safe bet that this man does not know the names of his patrons of 1920 who

are not patrons of 1921 and that he does not know the names or the tonnages of patrons of 1921 who never before were on his books. He has never made a systematic study of the prospective customers who never had purchased from him, nor has he outlined nor does he follow any definite policy to obtain their business. That man does not recognize his opportunities and usually when you hear such a statement made you can mark it down that the dealer has arrived at his proper place—that Providence has placed him where he belongs with due regard to his ability, energy and finance. Before reaching out for larger fields, he must first get out of his present opportunity all there is in it.

At your former conventions great stress has been laid upon the need of the knowledge of the cost of doing business. The knowledge of the cost of doing business involves statistics. How many really appreciate the value of the figures that are prepared and put before you? This information is only of value to you, as it is placed before you in comparative form—compared with last month, last year—the average of the last five years—and then its value is entirely dependent upon your application.

THE PURPOSE OF TRADE STATISTICS

Figures of themselves will grant to you no benefit, but if, as you look over these cost sheets, you find some feature of your business has increased in its cost and you make the necessary adjustment resultant from increased mine, freight and wage cost, you get down to individual performance and are then in a position where you can apply the power of the executive. But has it occurred to you that similar statistics can easily well be prepared that will give to you the full story of the presence or absence of salesmanship in your organization?

In a small business these statistics must be in detail, in a larger business your comparison can be in total, but the result is identically the same. Day by day it is possible for the executive to have before him information which tells whether or not his organization is "standing up" or "falling down."

How many of you, knowing your annual tonnages, have reduced them to a daily basis?

How many days in the year do you know whether or not your inbound orders and outbound deliveries are up to or in excess of the schedule?

How many really know why when your daily schedule is not reached? Is it not easier and is it not a fact that instead of knowing you cuss the weather, damn the administration and lay the blame on industrial conditions, while, in point of fact, the industrial situation in your town may perhaps be more healthy than ever?

This brings home to me a peculiar fact developed a few years ago while visiting a retail friend. On our way to the office in the morning he asked me to stop with him while he solicited the coal

order of a large department store. We saw the proprietor and my friend was told that while they would like, very much, to give him the order, it was their practice to place the business with patrons of the store.

My friend insisted that his family were good buyers in that store, but when we were shown the books his name was not there. That evening upon questioning his wife, he obtained from her receipts showing cash purchases for a year which totaled more than any of the credit accounts that had been shown us, and through them he secured this business.

KEPT NO DATA ON CASH CUSTOMERS

At that time my one thought was that the man who pays cash loses his credit. Just a few weeks ago I saw in a retail coal office another and more striking instance of the scant consideration accorded to the cash customer. Wonderful records had been developed and numerous clerks were engaged on the telephone in the solicitation of orders. I looked over the records and noticed that they covered only charge accounts.

I asked the president of the firm if they did not solicit their cash trade with equal energy, and his reply was, "No, we do not have record of our cash customers."

Think it over!

And yet almost every day some retailer says collections are not as good as they should be. Certainly not; your cash trade is getting away from you for the reason that you do not give it the same attention, the same careful thought that is given to accounts bearing risks of collection. Just put that cash customer in the same class as "the bird in hand."

We have just completed a study in one of our wholesale territories. We have not found that the people have moved away because of industrial depression; they are still there and those families must have coal. Strange as it may seem, the towns suffering least from depression were those doing the decreased retail business, while in other cities where all factories were on short time or wholly closed, a normal tonnage was being moved.

The answer is SALESMANSHIP.

REQUISITES FOR GOOD SALESMANSHIP

In the short time at our disposal it would be impossible to cover all that might be said on Salesmanship. A review of the many books that have been written on the subject leads one into a maze of approach, prospect, introduction, selling talk and psychology, but all of these publications bring home to you the thought that selling is really made up of a high sense of integrity, a knowledge of your goods, a knowledge of existing conditions and of a desire to serve, backed up by an energetic application of common sense. Beyond this there is no secret to salesmanship.

The high sense of integrity you must have, as only through it can the confidence of your buyers be acquired, and

the confidence which others have in you is your keystone to success. To instill confidence you must place your business on a sound foundation through strict adherence to a fixed policy founded upon a square deal for everybody. The moment you deviate from that method your credit at your bank is impaired. You may not think so, but if you are not thinking so you are thinking wrong.

When you find out the cost to you of your commodity and add to that base cost your legitimate expense for handling, and to that total cost a just and fair margin of profit to arrive at a reasonable selling price—stick to it! To deviate from it indicates that you were either wrong in arriving at that selling price or that you are a merchant who is playing favorites—and playing favorites is a dangerous practice, either on the race track or in business.

If you are a believer in a square deal for everyone—stand by that belief and “fight it out on those lines if it takes all summer.” The “square deal”—the gaining of confidence of the buying public—really involves a “one-price,” short-credit and open-advertising policy.

WHY PRICES SHOULD BE CONSISTENT

The mine price of the prepared sizes of coal views impersonally all dealers and all markets. The published tariff and the war tax charge are equally inconsiderate of the large dealer and the small; of the dealer with antiquated equipment and the one that is modern and up-to-date. When, therefore, the retail dealer makes an arbitrary distinction in favor of the consumer who buys ten tons as against the consumer who buys in smaller quantities, he does not impress either customer that he is receiving impartial treatment.

When the retail dealer makes the same price for egg, stove and chestnut to his customers, he is not giving a convincing demonstration to the mines that co-operation in distribution of sizes is being encouraged or developed; neither does it impress the customer favorably when he learns from the public press that egg, stove and chestnut do not take the same mine price.

CREDIT CAUSES UNNECESSARY LOSSES

When for any other reason or lack of reason any two customers appear in the dealer's office to inquire the price of coal and the dealer is forced, because of “local custom” or “peculiar conditions,” to give different prices for a similar service, the reputation of the dealer suffers with both customers.

One of the most fruitful causes of unnecessary expense in business, of unnecessary losses and of disputes over accounts is the matter of credit. Not a little depends upon the clearness of the understanding established between the dealer and the customer as to the part that each is to perform and when.

When the one-price policy has been adopted, it should reflect every charge upward or downward of mine price, or freight rate, or local labor schedule.

The public should be advised of the nature of the change, of the amount and the new prices that are established as a result. If the dealer does or does not expect to fill the orders on file with him at the lower price, it should be so stated.

The second requisite to your success is a knowledge of coal. The successful men in our business today are those who have, at the cost of time and expense to themselves frequently visited the mines and who keep acquainted with the processes of coal production and their development. Because of their knowledge these men do not ask questions similar to those put to us at the convention last year, when, you will recall, we were asked: “Do not the anthracite producing companies deliberately inject rock and slate into the coal in order to increase tonnage?”

For some unexplained reason, many coal companies in compiling voluminous records for use in obtaining future orders, ignore cash customers entirely, despite constant complaints about difficulties in making collections from charge accounts. An attractive business place does much to create a favorable impression in the contest for business.

And, again, “Do not the anthracite companies store prepared coal at the mines in order to bring about an increased price?”

The company with which I am connected, and I am quite sure all other anthracite producing companies as well, will very gladly extend to each of you an invitation to visit us at the mines. We will see that opportunities are afforded for you to visit the various breakers and witness the process of manufacture and that you are made acquainted with the details of inspection. We will gladly exchange what we know about coal for your time. After such a visit you should be able to go home with a new enthusiasm based upon the knowledge that the coal which you are selling is the BEST which you can possibly obtain for your people.

Dealers who visit the mines usually go home with an understanding of the difficulties confronting the producing company. They see the raw product as it comes from the mines—they gain some idea of the magnitude of the enterprise. They see the expensive machinery required for its manufacture; they are impressed by the spirit of co-operation that exists in the producing personnel; they observe the care exercised by the companies to see that their product is right for the market; they note the pride of individual employees in being connected with com-

panies of long life and high standing and note how each of those employees tries so to do his job as to continue through time that reputation.

An observing man cannot avoid acquiring through such a visit a new enthusiasm, a new idea, a new incentive, which will produce results upon his return home. Such a visit gives to him faith in the article he sells, confidence in the organization from which he obtains it, a knowledge that will make possible for him replies to practically all questions that may come from his customers.

ENVIRONMENT'S BEARING ON SUCCESS

Environment is an important contributor to success. If your environment is such that it breeds carelessness and inattention to detail, if it is such that it creates in you, a dealer, a feeling of smallness, of inferiority, you are working under a handicap that no amount of personal energy may overcome. There are many dealers in coal who are keeping offices or places of business not consistent with the times—not in keeping with the dignity of the business nor the community in which they sell.

Successful selling is largely a state of mind, and if you are surrounded with conditions which do not bring out the best that is in you, how can you hope to compete with others who are running the race without such drawbacks? What I wish to recommend to each and every one of you is to make your place of business as attractive as your conditions will permit.

You are influenced by appearance and surroundings. When you came into this hotel, there was registered in your brain, involuntarily, a criticism or an approval. You either said to yourself, this looks like ready money, or the opposite, and so with one of your customers coming into your place. He does not go into detail in his analysis, but there is at once photographed on his brain a picture of your surroundings, and that picture measures your capacity in his estimation. No matter how much you endeavor to explain to him why you continue to sell coal from a poorly kept office, no amount of argument will efface this mental picture.

CULTIVATE POWERS OF OBSERVATION

One of the old rules of the opera was: “Get a good stage setting and the part will play itself.” One of my rules for successful coal selling is “Get a good stage setting”—that in itself will help you to play the part. You may come back at me and say: “My business won't warrant it,” and my answer to you is: “If your statement is correct you haven't got a business; the business has got you.”

Cultivation of the power of observation is another great asset in business. The successful surgeon or lawyer maintains his position of prominence only through constant study. To advance, even to preserve his present position, the coal man must constantly keep alive to ever changing conditions. He should

study his trade journals for word of any new law, regulation, discovery or practice that affects his article at its source of production, in transit or at its point of destination.

A close watch of your daily press will open to you many avenues for tonnage. Some of you, reading the local morning paper might not attach any particular importance to the fact, announced therein, that John Smith was going to move from a neighboring town to the Jones' house in your town, but an observing coal dealer would immediately say: "There is an opportunity for a sale." The glove factory may be advertising for twenty-five additional hands. The employment for twenty-five additional hands would mean more wages, more cooking, more coal. You read that the Chamber of Commerce takes credit for bringing a new industry to town, and that fact should, to the active dealer, stimulate thinking about the fuel supply of its employees, and so on down the list.

A fundamental principle in all good salesmanship is that the idea of service to the customer should be kept foremost. Permanent success can come no other way, for thus are customers gained and kept—a dealer's best advertisement is a satisfied customer. We benefit ourselves only as we benefit

others, and it is recognition of this fact that has placed the successful dealer where he is today.

It, of course, goes without saying that a large part of the salesman's equipment is the firm behind him. Courtesy in all personal contact, care in delivery and consideration and appreciation of the customer's interests back up all his arguments in a most effective way. The up-to-date dealer sells not only coal but heat satisfaction, and his services should always be at the command of his clients when they fail to get such satisfaction.

Energetic application and common sense close my chapter. The meaning of these four words is so potent that they require no explanation. There are none of you but who look with interest upon the man of energy, the man who applies himself to his task, who presents himself to the community in a straightforward businesslike manner, without frills or the use of superlatives.

Courtesy and kindness produce goodly dividends. Some are naturally courteous and have a peculiar faculty of making friends. They continually cultivate that faculty to make it more valuable. Others are indifferent and give little heed to the individual, once the sale is made.

A few years ago, R. S. Rodie and a

friend were traveling from Bluff Point to Albany. The traffic at that time was particularly heavy and when the train pulled in Mr. Rodie asked the porter for two chairs. The colored gentleman replied, "Sorry, Boss; dey all done gone." Mr. Rodie stepped a little closer to him and said very distinctly, "Porter, kindness makes friends—I want two chairs." "Yas, suh," replied the porter, "but dey ain't no chairs lef'." Mr. Rodie took hold of his sleeve and repeated, "Porter, you don't seem to understand me; kindness makes friends." "Yas, suh; I gets you, boss; you jes' stick aroun' when the train starts, an' I may fin' jes' two chairs." He did. And kindness in business may find "jes' two chairs" also.

During the year a dealer has scores of opportunities to make friends through some little act of kindness or some courtesy that brings him into greater favor than pages of advertising.

In conclusion let me give you this thought to take home with you: The man who knows exactly what he is driving at and has a definite plan for getting there can be interrupted and bothered, but he always sticks to the main line and comes out of every difficulty with his face toward the straight course. HE WINS.

Washington State Works, Renouncing Union

COMMERCIAL coal mines in the State of Washington which have been closed since last March, when the miners refused to accept a reduction in wages, were reopened Aug. 22 with labor independent of the United Mine Workers of America. Coal is now being shipped from several of the mines and work is under way in most of the large producing mines.

A ready response met the call of the mine operators for men who would work in the mines under the wage scale recommended by the State Coal Commission, which recently completed an exhaustive investigation into the coal-mining industry. The new scale, known as the Allport scale, was submitted by the neutral member of the commission, James H. Allport, of Barnesboro, Pa., and was at once accepted by the operators, while the local and national officials of the miners' union refused to permit the men even to vote upon its acceptance. It was this act which precipitated the breaking off of all relations between the Washington Coal Producers' Association and the United Mine Workers of America.

Wages paid under the Allport scale provide a contract rate for coal miners which makes possible earnings from \$7 to \$14 per eight-hour day, while \$6 per day is paid day-scale men both above and underground, \$5.25 per day for common labor underground and \$4.50 per day for common labor above ground.

Washington mine operators did not sign a contract with the unions requiring them to pay the scale in effect in Eastern mines, though in September, 1920, upon threat of a strike the demands of the miners were met, at which time the operators issued this statement: "We have met your demand for this large increase even though it will cost us many times more than any other mines in the country and though it very probably means the beginning of the end of many of the mines."

In February of this year the operators announced that a return to the wage scale of Oct. 31, 1919, would be put into effect, inasmuch as the mines were being operated at a loss and as no contract had been signed binding them to pay the scale then in effect until March, 1922. As a re-

sult the mines were closed on March 15, when the men refused to accept the reduction.

The investigations of the State Coal Commission showed that from October, 1920, to the end of February, 1921, there had been an average loss to the operators of 26c. on each ton of coal produced, while as far back as May, 1920, the loss had averaged 15c. per ton. It was this situation which brought about the necessity of a wage reduction.

Acting independently of the unions, the operators have reopened the mines with the announcement that a plan of organization embodying the principle of collective bargaining will be worked out between the operators and the men in which they will be given a voice in the discussion of their mutual problems.

Under normal conditions the direct payroll of the coal industry in Washington is \$11,000,000 per annum, while approximately 30,000 people are dependent upon the mines for their living.

The Pacific Coast Coal Co. has been denied a permanent injunction by Judge A. E. Griffiths in the Superior Court of King County, restraining strikers from picketing the mines. Counsel for the coal company has appealed the case to the Supreme Court of the state, stating that it has more than once been decided that picketing was unlawful.

Indict Men of Army That Marched on Mingo

ALOGAN COUNTY (West Virginia) Special Grand Jury on Sept. 17 returned a blanket indictment against 325 persons, charging them with murder. This indictment follows an investigation of the recent disturbances on the Logan-Boone County border.

Among the names are those of C. F. Keeney and Fred Mooney, president and secretary, respectively, of District 17, United Mine Workers of America, and H. W. Blizzard, also a United Mine Workers' official. In addition, 200 indictments charging insurrection and "pistol toting" were returned.

Keeney and Mooney were arrested Sunday, Sept. 18, in Charleston, Kanawha County, W. Va., and on Tuesday, Sept. 20, were incarcerated in the jail at Williamson.

Engineers Present Interesting Papers and Discussions At Meeting in Wilkes-Barre*

BY R. DAWSON HALL†

AT the Tuesday evening (Sept. 13) meeting of the American Institute of Mining and Metallurgical Engineers, R. A. Quin presiding, C. M. Means read his paper on "The Installation at the Coverdale Mine." In the absence of the author, J. R. Bruce's paper on the "Octagonal Ventilation Shaft of the Davis-Daly Copper Co." was passed over. H. A. Reichenback then made the illustrated address on the "Application of Pulverized Coal to Boilers," which was to have been presented by J. M. Fuller, of the Fuller Engineering Co.

On being questioned the author said that 19 to 20 kw.-hr. per ton were used in pulverizing anthracite and 16 to 18 kw.-hr. per ton for pulverizing soft coal. Robert Klotz later declared that 20 kw.-hr. were sufficient to pulverize some anthracite but that the average would be nearer 40 to 50 kw.-hr. per ton.

H. M. Chance gave some interesting facts relative to the strength of anthracite. When the Anthracite Mine Cave Commission endeavored to determine the strength of anthracite pillars they found that cubes of anthracite would withstand a compressive force of from 2,000 to 3,000 lb. per square inch and that some would reach 5,000 or even 6,000 lb. per square in. As these pieces all failed along cleavage planes he thought that it would be instructive to find out what the strength would be if pieces were taken so small as to be traversed by no cleavage planes or by planes less well marked than those in the larger cubes.

He therefore made $\frac{1}{4}$ -in. cubes and got a strength of 12,000 to 15,000 lb. per square inch and $\frac{3}{4}$ -in. cubes, which would withstand 19,000 to 20,000 lb. per square inch, and he supposed that had he obtained small enough cubes he could have proved them capable of withstanding 30,000 lb. per square inch. That would suggest that the inherent strength of the material, where not checked by cleavage planes, would be found equal to that of granite.

Mr. Klotz said that the practice of burning anthracite by projecting it in a vertical downward stream from the top of the furnace chamber so that, being deflected upward, it would follow a V course, lengthened the path that the flame had to traverse before it impinged on cooling boiler tubes. This method of burning made the combustion the more complete.

FAVORS CYLINDRICAL DRUMS FOR DEEP HOISTS

Graham Bright then gave a brief of his paper on "The Determination of Electrical Equipment for a Mine Hoist." In discussing it Mr. Stone said that there were objections to using anything but cylindrical drums for deep hoists, the difficulty arising from the structural needs of the drum. Freak drums were necessarily heavy. The inertia of a heavy cylindro-conical drum on a deep hoist would largely overbalance the reduction in the peak loads which changes in diameter would otherwise afford. Three hundred feet of a lift was well suited to the cylindro-conical drum.

L. F. Mitten said that the paper had taken no account of the fact that with self-dumping cages balance was not provided at the beginning of the hoist, and Mr. Bright replied that the time during which this additional strain acted was so short that it would not heat the motor excessively and that in consequence it was not necessary to take it into account in designing the electrical equipment.

In the morning of Wednesday the economic geologists held a technical session and another session was held to consider mine accounting and finish the discussion of those papers the presentation of which had been delayed. Accordingly, the first paper at this second session, which was presided over by R. V. Norris, was "Capitalization and Valuation of Mine Development," by J. B. Dilworth.

Mr. Dilworth stated that some believed that capital account should be charged with all items until normal production was reached, others until the production was 50 per cent of normal and others again until the cost of extraction and preparation equalled the selling price—that is, in accounting parlance, until the operation broke even. He said that the capital charges for development should be divided into two parts—A and B—of which A would be permanent development, which should include those items which were to be permanently used until the mine was abandoned, and B temporary development, those items which were to be continually replaced during the life of the plant. The first should be written off year by year but the amortization should be delayed on the second until there was to be no more development and work was to be commenced on the mineral adjacent to old galleries and headings. Reductions should, of course, be made for mineral obtained during the development period.

Mr. Clark, for Mr. Johnson, of the Lehigh & Wilkes-Barre Coal Co., read a discussion on the peculiar accounting needs of the anthracite region. H. B. Fernald, chairman of the committee of the institute on accounting, spoke on the importance of making a distinction between cost and valuation. He said that two sets of books might well be kept when good judgment would suggest it—one in accordance with the rulings of the Internal Revenue Department and one for what seemed better in accordance with the demands of practical accounting.

VARIETY OF SYSTEMS USED BY REVENUE DEPARTMENT

James H. Allport said that his experience at Washington was that no two valuation accounts were kept according to the same system. R. D. Hall stated that some provision should be made to take care of the overdevelopment practiced in certain seasons and to write off this cost at times of underdevelopment during other seasons when output was the main consideration. R. V. Norris said this overdevelopment should not be put into capital account.

Edwin Ludlow propounded the following question: A slope has been driven so far that the hoist which has hitherto handled the cars can no longer do so. A new hoist must be purchased and installed. Are the costs of the change that cannot be met by transferring or selling the old hoist chargeable to capital account or to operation? Mr. Allport said that the costs should be distributed over the period during which the new hoist would serve the purposes of installation with due regard to the value of the hoist after its work in that place is done.

D. C. Ashmead, having at last received the reprint of his paper, read a brief abstract of it, outlining its principal features. In discussing it, Sidney J. Jennings, referring to E. W. Parker's reference to his Monday's paper to anthracite as a "luxury fuel," declared that after seeing the methods of preparation he thought the coal consumer ought to find some way of being less luxurious. Why prepare coal so meticulously? The operation interest and depreciation costs of the Marvine breaker must add \$1.20 or more per ton to the cost of the coal. Could not some of that cost be saved by working the breakers, as the metal men worked their mills, twenty-four hours instead of eight hours a day, reducing the expense to about 60c per ton? Mr. Jennings said that if the mines were to be worked for eight hours only and the breaker for three shifts, or even two, why not provide a storage bin that would hold enough for continuous or nearly continuous running of the breaker?

C. E. Leshar said that metallurgical men were agreed that for proper separation of impurities close sizing was absolutely necessary. Therefore, the sizing must be done carefully even though the public might be willing to accept a product in which the sizes are mixed. Surely Mr. Jennings did not mean that the public should invite the oper-

*Final installment. The initial portion appeared in *Coal Age* last week, page 463.

†Editor, *Coal Age*.

ators to be less careful as to their cleaning of the coal.

C. H. Strange said that he believed that a better economy would be attained by introducing the time clock, so that the men would not be leaving the mine at all hours.

C. W. Starr wanted to know in what way Mr. Jennings would limit preparation; surely not so as to reduce the freedom of the product from slate and bone? H. L. Davis declared that in the mine each man had a place of his own. If there were two or three shifts, each man would have to perform a specified stint and receive a specified part of the pay given for the product of the place. With tonnage workers it would be difficult to divide the output except, perhaps, by arranging the labor so that the work of the least industrious in the place would be the measure of the return to output of every man working in it.

Arthur Thacher urged that men should be paid by the day and not by contract or by tonnage or yardage. It might not be possible to adopt the day-rate plan at once but it was a good plan to aim at looking to ultimate adoption. It was fairer to the men. R. V. Norris also laid stress on the difficulty of providing for a division of labor when men were working in three shifts or in two.

W. A. Thomas, consulting engineer, of Scranton, Pa., then presented a synopsis of his paper "Electric Power, a Factor in the Anthracite Field." Mr. Thomas mentioned a plant where through the expenditure of \$12,000 for electrification a saving of \$11,000 a year will be made. He pointed out how by the grouping of collieries and the combining of their power production and use great economies might be effected.

B. H. Stockett said that while the Beaver Brook colliery had only three years or so to run it had been decided to electrify the plant. The steam costs were about 50c. a ton and the electricity costs about 30c. The saving would more than return the capital in three years. C. H. Strange complained that a number of companies had been induced to enter into contracts on the understanding that they would be able to get the "off-peak rating," but they found to their regret that their peak was at 11 a.m. Consequently they were "on peak" and would have to pay the full rate.

INSTALLATION EXPENSE SAVED IN NINE MONTHS

James H. Allport quoted a case where at an expense of \$80,000 a mining plant switched from steam to electricity and from a cost of 80c. a ton for power to 24c. In nine months the savings had paid for the plant installation. W. A. Thomas said that R. E. Hobart had shown that the Rahn colliery, of the Lehigh Coal & Navigation Co., used 12.818 kw.-hr. per ton though the pumping and ventilating charges falling on the plant were comparatively light.

R. L. Wensley then gave a brief review of his paper on "The Automatic Substation for Coal Mines." Someone remarked that there were more failures of the substation than under mechanical supervision. The equipment was to be preferred to the college-trained substation operator. Graham Bright said that automaticity would soon be extended to embrace far more than the substation. For instance, fans were being run with automatic regulation.

Edwin Ludlow said that at the plant of the Bessemer Limestone Co., at Johnstown, Pa., one man in a tower regulated the movement of the cars in the quarry from a single point. He was stationed in this tower overlooking the whole operation and from that point he directed all transportation to the dump of the 1,400 tons per day that the quarry produced.

The institute members were guests of the Wyoming Shovel Works at Wyoming, Pa., for lunch, whither they went by automobiles. Caterers had been brought from Philadelphia and the lunch served was quite elaborate. For souvenirs trenching shovels, made for army use, were distributed.

After a rapid return to Wilkes-Barre, the institute members went either to the plant of the Vulcan Iron Works, to that of the Hazard Wire-Rope Co., to the General Technical Session or to the Economic Geology Session. The last, which was conducted under the chairmanship of H. M. Chance, was interesting to coal-mining engineers by reason of James F. Kemp's account of the "Stratigraphy of the Anthracite Region." Three of the anthracite companies had presented cross-sections of their most disturbed coal properties, showing that the old concentric sections of early

geologists represented but indifferently the true state of affairs in the anthracite region where the local weakness of the stronger measures had crumpled them irregularly, pushing the strata of shale, coal and clay into many highly erratic forms having no similarity to the folds of the beds above and below them.

H. M. Chance remarked that at the time of the secondary geological survey of Pennsylvania, the companies had not so completely developed and explored the areas in which they were operating. Particularly was this true of those places where rolls like those shown by Professor Kemp existed. The irregular pitch and thickness and the weakness of the roof made it extremely expensive to extract the coal and it was accordingly left entirely uncharted.

H. H. Ashley remarked that the similar, but minor, actions of the clays in western Pennsylvania had gone without chronicle. All the clay beds in that region had been buckled unmercifully, as might be believed by those who noted the slickensides which it repeatedly and almost universally exhibited. The smokeless coals had also been buckled and broken. Houtzdale coal has hundreds of small faults. There was no give in the sandstone. It made the clay and coal give way to its movement. On the Juniata, Mr. Ashley said he had photographed erratic folds that were more peculiar even than those shown by Professor Kemp.

David White wanted to know which, at the time of the great Appalachian movement was the most plastic, the clays or the coals. He said that these two elements in the geological structure had to compensate for much of the mechanical movement of the measures. The Pottsville Conglomerate was quite thick and resistant and it often squeezed out the more fluid beds with its nut-cracker action, the coal being perhaps more plastic than the underclay.

William Griffith called attention to the frequency with which slickensided lenticular coal made its appearance in the anthracite region, showing the intense shearing actions to which it had been subjected when superior and inferior measures pushed it from place to place to permit of their movements.

David White said that he believed that the time had come when anthracite coal-company engineers and geologists could estimate the shortening of the arc that had taken place by reason of the bucklings caused by the pushing action of the uplifted Appalachians.

EDWIN LUDLOW HONORED BY BRITISH MINING SOCIETY

At the banquet in the evening the speakers were: R. V. Norris, chairman; Professor James F. Kemp, toastmaster; Doctor Henry S. Drinker, one of the founders of the society; Edwin Ludlow, president of the Institute; Arthur S. Dwight, who reported on the visit of the representatives of the founder societies to Great Britain and France, where they were greeted, toasted and honored by the engineers of those countries. Mr. Dwight presented an honorary membership in Great Britain's national mining society to Mr. Ludlow, as instructed in a letter from the secretary of that organization. Lieutenant-Colonel J. A. Ritson, who has been sent over to investigate our first-aid methods, to find out why we mine so much coal per man and compete so strenuously for the coal trade of Europe, made an interesting speech.

On Thursday a long automobile trip was taken. The weather was perfect until on the return home, when at Hazleton, almost a cloudburst occurred, a storm which was quite local and left much of the roads between Hazleton and Wilkes-Barre as dust-laden as ever.

On the way out the Hauto plant was inspected. It is being doubled in capacity. The original plant delivered 25-cycle current. The new plant will generate at 60 cycles and later the old plant will be remodelled to accord with it. An excellent lunch was furnished by the Lehigh Coal & Navigation Co. at Greenwood Park. Turned disks of "Navigation Coal" were presented as souvenirs of the visit. The party lined up for a photograph and the teams which won the first three prizes in the company's annual first-aid contest gave an exhibition of their skill.

On the way home the visitors left the automobiles to visit the Tamaqua water shaft and the electric and steam hoists by which it is operated; the Lattimer stripping and the old Milnesville and Hollywood strippings.

West Virginia-Kentucky Mine, Mechanical and Electrical Engineers Meet Conjointly with Coal Exhibit—I

Condemnation of Use of Separate Circuits—Inquiry by Electrician as to Wasteful Use of Power Advocated—Dispute as to Bond Testers—Predicament of Companies with Large Units and Light Loads

BY R. DAWSON HALL*

A LARGE attendance greeted the efforts of the equipment men and the Huntington Chamber of Commerce in establishing a Coal and Industrial Exposition in Huntington, W. Va., Sept. 19 to 25. A goodly number of engineers also attended the sessions of the West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers in its first annual meeting, which began Sept. 20 and ended Sept. 24.

Among the exhibitions were a two-ton monolith of coal from the mines of the Main Island Creek Coal Co., at Omar, W. Va.; an arch of solid coal blocks built by the Solvay Products Co., an industrial moving picture of the Otumwa Box-Car Loader Co., a new equalizing device just patented by the Goodman Mfg. Co., and a new cable-reel splice recently put on the market by the Huntington Cable-Splicing Co. The strength of this splice was demonstrated by attaching one end of the cable to a block anchored to one of the steel posts of the building, the other end of the cable being held by another post. On the block being operated the cable was pulled apart, but not at the splice, which, simple as it was, still held firm.

LOW CAR HAS 120 CU.FT. CAPACITY UNTOPPED

Another exhibit was a new mine car built for Carl Scholz, general manager of the Raleigh-Wyoming Coal Co., by the American Car & Foundry Co., of Huntington. This car is 37 in. in the clear above the rail. Its capacity is 120 cu.ft. without topping. Its inside length is 10 ft.; its inside width, 6 ft.; its inside depth, 2 ft., and its weight, 4,280 lb. It resembles a gondola rather than a mine car and is intended for mechanical loading and handling. The wheels project into housings in the bottom of the car box, which has absolutely no flares. It is made with solid ends and will be discharged in a rotary dump. The Bermico fiber pipe is another exhibit of merit and interest. It occupied the stall of the Fiber Pipe Co., of Indianapolis.

A large model of a steel tippie with Morrow cleaning, sizing and loading devices, exhibited by the Morrow Mfg. Co., was one of the most striking features in the show. There were many other interesting exhibits but these particularly caught the eye and the attention. In all there were eighty-eight stalls and an even greater number of exhibitors.

Passing over the mining show somewhat cursorily, attention will now be given to the meeting of the West Virginia-Kentucky Association of Mine, Mechanical and Electrical Engineers. This convention held its meeting solely in the mornings, giving the attendants at the mining show an opportunity to view the exhibits in a leisurely manner in the afternoon and evening, and to visit with one another. The meeting being called to order by the President, J. H. Edwards, mechanical engineer of the Elkhorn-Piney Coal Mining Co., Roscoe Woltz read a long and carefully detailed "Report of the Committee on Practical Methods of Reducing Kilowatt Hours Per Ton of Coal Mined." Mr. Woltz said that most of the engineers accepted what had been customary without due consideration, just as, for instance, they had accepted copper as a conductor without any inquiry as to whether it was the metal best suited to their needs. The report's primary consideration was given to power supply, Mr. Woltz saying that 50 per cent of the electrical trouble in the mine was due to low voltage.

Realizing the inadequacy of direct-current distribution,

with the limitations caused by the high cost of conducting materials, he said that the only cure was to provide alternating current for that purpose. He urged that the allowable loss of voltage in the mine be determined by the management. It should run between 10 and 15 per cent, depending on conditions. Then efforts should be made to provide such a distribution that not less than 85 or 90 per cent of the voltage of the generators should be available at the working face.

He spoke unfavorably of the practice of using three separate circuits, one for haulage, one for coal cutting and a third for pumping. Less copper would suffice when all three were on one circuit, for the peaks of one form of power use would be unlikely to come at the same time as the peaks of the others. Mr. Woltz's report declared that the electrically-welded bond if not made expertly, was not as good as a compressed terminal bond where the latter was properly installed.

ELECTRICIAN SHOULD SUGGEST POWER SAVINGS

Speaking of haulage and cutting losses, he began to trespass on the domain of the mine foreman, who contended, and indeed still contends, that it is the electrician's duty to supply the "juice" and the foreman's duty to use it, or misuse it, at his pleasure. He said that motormen wasted power by failing to provide themselves with sand and using the brake excessively, by turning the controller handle so rapidly as to cause the wheels to slip, and by running on resistance. The motorman by care can greatly reduce the number of kilowatt-hours necessary for the operation of his motor. In view of the fact that 25 per cent of car repairs are due to wrecks it seems futile to try to interest the powers that be in the savings in energy which good roads without excessive curves will invariably afford. A straight, substantial roadbed will reduce materially the running and repair costs of electric locomotives. Another saving is in proper car lubrication.

Two cars, one properly lubricated and the other unlubricated, were made subjects of a comparative test. The resistance of the latter was 44 per cent higher than that of the former. It is easy to see that economy in power could not be obtained with unlubricated or ill-lubricated equipment. As for roller bearings they did much to reduce friction, provided only, however, that they were not used on soft axles, into which they soon wore bad spots.

LOSSES IN CABLES AND IN ILL-SHAPED BITS

Again in cutting coal, if chisel bits were not used in beds with sulphur balls the machines would consume an excessive quantity of power. It was not impossible to find a potential drop of 100 volts on a feed cable, this arising from the cable being too small, inefficiently and excessively heated and improperly spliced, especially if the coal is hard to cut. The cable resistance also will be increased by heat. A cable reel once well heated will remain hot all day, as it gets more heat constantly and is so surrounded by insulation that it cannot cool. This heat eventually will ruin any insulation.

Again in the matter of the use of power for drainage, a little forethought may save power, and that thought should be given by the electrician if the foreman fail to supply it. Most electricians will put the pump just where the foreman wants to place it, and will let it pump water just where the foreman would have it. It may pump the water into old workings, which will lead it back to where it came from,

*Editor, Coal Age.

with the result that it may have to be pumped over and over again. If possible water should be pumped but once. Pumping water from sump to sump is rarely good practice. Once started over a summit in a pipe line it quite frequently will go by gravity over lesser summits to the surface.

The ventilation load often is 25 per cent of the total power consumption. It must be remembered that big savings in power can be made if excessive ventilation be not provided. If the quantity of air delivered at the fan be doubled, the power used will be multiplied by eight. Excessive fan speed is greatly to be condemned. If this machine can be run at half speed at night and on idle days large economies can be effected.

Again a fan built for either one of the two forms of ventilation should be operated accordingly. A pressure fan should not be run exhausting or vice versa. By so doing the power used may be increased as much as 15 per cent.

The last advice contained in the report related to such a use of power as will make the load as even as possible. Cutting—that is, where possible—and pumping at night and using storage-battery locomotives were described as methods of reducing power consumption. Where the town lighting is separately metered, it will be noted that the demand is low in the summer. By figuring this use of this power separately, it will be possible to note with assurance whether power is really being economized.

SHOULD EACH BOND BE SEPARATELY TESTED?

N. A. Johnson questioned Mr. Woltz's inclusion of the bond tester in the equipment needed to determine the efficiency of the return circuit. He said that with a thousand bonds, more or less, to test, how could the bond tester be effectively used? He believed with Mr. Woltz that the best method of testing bonds was by short-circuiting near the face of the workings, determining the whole drop in voltage, subtracting from it the proper drop for the trolley and feeder lines and so getting a figure that would closely approximate the current drop in the return circuit.

Mr. Edwards, the president, agreed with Mr. Johnson, saying the bond tester was all very well for a bond or two. Having proved that a few were defective, one could go to the superintendent and declare there must be many more. He then might believe the electrician's analysis of the conditions or he might and probably would, declare the bonds in question exceptional. He believed the voltage drop test to be the better method, though it failed to inform the superintendent just where the defect lay.

Another remarked that the main work before the engineer is to test not the bonds in all the roads, gathering and main alike, but those in the main roads where the current is larger and the losses most significant. Following that consideration to its conclusion the work of bond testing might be greatly reduced. C. E. Rogers was in favor of a most rigid examination of bonding. He would have all the rails numbered so that a report could be made as to poor bonds once or twice a year after a careful proving of them with a bond tester. The advantage of numbering bonds is that when any get into such poor condition that their failure as conductors is revealed by arcing, the number of the bad bond can be readily recorded and the condition remedied. This is less conveniently possible when there is no system of accurate identification.

USING A CAR FOR TESTING OF RAIL BONDS

One of the members suggested that a good bond be made and the drop across it recorded, this serving as a guide as to what can be expected and furnishing a standard for all the other bonding. The presiding officer remarked that it was his practice to establish a standard of perfection. As conditions ran, he found in his mines bonds running from 30 to 95 per cent of that standard.

R. J. Wensley remarked that in railroad work he had used a car for testing rail bonds, the current entering by the front wheels and leaving by the back. A millivolt meter recorded the drop in voltage on both sides of the rail joint. The bad bonds were marked before the car proceeded to the next bond. To this the president of the association interposed the objection that few road-repair men could use a millivolt meter half a day without burning it out.

The recommendation that storage-battery locomotives be used for gathering, despite the fact that their performance was somewhat lower than that of the reel types, occasioned animated discussion. What, asked one, is the relative output of the two types?

Mr. Woltz declared that in one instance, where both types were operated successively in the same place, it was found that the storage-battery locomotive hauled seventy-six coal cars and the rock cars that naturally went with them, while the reel locomotive handled 106 coal cars and their normal quota of rock cars. The partings were later advanced so as to make the number of cars gathered by the storage-battery locomotives about equal to the number gathered by the reel type. Comparisons such as these, without details as to the equipment and conditions, are, however, hardly conclusive.

It is true that locomotives of equal weight gave equal pull regardless of the power source, but, unfortunately, the batteries of the storage-battery locomotive ran down prematurely or were injured permanently if they were required to pull all that the weight of the locomotive would in itself permit.

Mr. Wensley said that the depreciation of the battery should not be overlooked as a count against the accumulator locomotive, but a member called attention to the fact that the breakage of cables was an even greater source of operating loss.

Mr. Edwards remarked that the use of over-large motors was a prolific cause of waste of power. He knew of a mine repair shop, designed by an architect rather than an electrician, which had a 24-hp. motor. In this shop 4 to 6 hp. was all that was used. A large loss in power was incurred in running so large a motor for so small a demand. Some time later a fan motor was needed and the shop motor was pressed into service, the 24-hp. motor being replaced by one giving only 10 hp.

WASTEFUL TO CRACK NUT WITH SLEDGE HAMMER

Following up this idea, E. D. Knight, of the Cabin Creek Consolidated Coal Co., called attention to the losses sustained in times like these from the use of large generating machinery. When the load is small and generators are large it is difficult to keep down the kilowatt-hours. He had seen cases when the load on the generator took less power than the exciter. With such relatively large units it was difficult to bring the power generated down to accord with the tonnage produced. Mr. Edwards said that at three mines with no production the power consumption had been reduced to 20, 23 and 35 per cent of normal, respectively.

Mr. Rogers urged that the return circuit be bonded to available pipe lines and said that he had been using such water lines for the return current and had found no signs of injury to the pipes.

R. J. Wensley then made an extemporaneous address with the "Automatic Substation for Coal Mines" as his theme. He said that the railroads had been supplied with such equipment for years and that some time ago the electric companies prepared to sell like equipment to coal companies, but as the companies' engineers were misled by railroad practice, which differed materially from mine practice, they designed controlling devices that cost four times as much as the machinery to be controlled, and hardly any attempt was made to sell it.

Railroads had at times, and frequently, sections with absolutely no load. Consequently it was arranged that the substation close down automatically when there was no load on the line, but this condition did not exist in mines, and accordingly no self-acting devices were needed to shut down the substation during no-load periods. The substation is closed down only by manually-operated equipment which may or may not be remotely controlled. At the Mt. Olive mine of the Consolidated Coal Co., in Illinois, ten stations are handled by a single electrician, and this man does not even start the main station, that being done at the power house at a distance.

Mr. Wensley said that there was always a danger of an open phase. An induction relay is provided in the automatic substation that will not let the machine start unless it is provided with polyphase current. The relay coils are built

so as to conduct the single-phase current without burning out.

The "Report of the Committee on Depreciation of Mine Equipment" was not made. As explained by E. D. Knight, one of the committeemen, J. J. Fluck, who had collected most of the data and was chairman, was being operated on for appendicitis and was unable to assemble his material or be present. Consequently nothing could be done but report progress.

At the meeting of Sept. 21 the "Report of the Committee on Power Plants" was read by R. R. Webster, the chairman. Mr. Webster said that direct current at 250 volts, the most desirable voltage for safety, was well suited to a plant where the transmission distance did not exceed 1½ miles. A lighting circuit could be carried two miles. With a limit to distance such as that mentioned the direct-current plant was really preferable, for it saved in transformer costs and in cost of maintenance.

The location of the power house should be determined by the following considerations, which in but few cases could all be satisfied concurrently: The power house should be close to the mine; it should be supplied with coal direct from the mine cars; it should have a good water supply; where no condensers are used it should be placed where the exhaust steam can be used for heating the commissary, the office and adjacent buildings; it should be located near the center of the load. However, as the report stated, it is quite easy to bring in the coal by railroad cars with satisfactory cost, and the station could do well, even where remote from the center of the load, if alternating current were used.

OVER-LARGE ESTIMATES HAMPER OPERATION

The power needs should be carefully estimated, but when estimates are being made it should be remembered that too high an estimate is as fatal as one that is too low. Except in a small plant, power should not all be concentrated in one unit, for at times the load will be so light that only part of the equipment should be running, and if there is but one unit it will be running too light. The night load is in general quite low. A 500-kw. plant may use 300 kw. during the day and only 100 kw. at night. In an actual case while the power use dropped, as stated, from 300 kw. to 100 kw. the coal used dropped only to 87 per cent of the normal consumption.

Reciprocating engines have the advantage that the parts are relatively visible and are therefore understood by the average engine runner better than are the parts of the steam turbine. The reciprocating engine uses a large quantity of oil, and the oil that goes into the steam gives the boilers much trouble. These engines are ill-adapted to the higher steam pressures. On the other hand, the turbine gives less trouble, saves space in the power house and though most mysterious in its operation is essentially more economical. The jet type of condenser is to be preferred, as it uses less water than other types and gives greater economy.

Fire arches may be either sprung or suspended. If the former they will last long if well built, but if the ordinary brick mason found around the mines erects them they will soon sag or fall. The suspended arch is more expensive but it will last longer and does not require the services of a really competent man for its erection.

The report declared that a feed-water meter and a curve-drawing watt-meter are the two instruments that should be purchased in preference to any others, if only two are to be bought. The first shows what water is really delivered. The number of feed-pump strokes can be counted, but there may be a heavy leakage in the valves.

It is a good practice to compare the water according to the water meter with the product of the pumping time in minutes, the number of strokes the pump makes per minute and the net capacity of the pump barrel. The difference will be leakage. Some interesting facts may be learned from the difference, which may set the engineer to grinding his valves or ordering new ones.

In discussing the paper the president said that if 200,000 kw.-hr. are used per month, it is well to consider the possibility of an isolated station being more economical than purchased power. If 500,000 kw.-hr. are consumed per

month, then it is fairly safe to put in a central station of your own, for it will be large enough to justify the employment of good engineering talent to run it, and the best equipment, instruments and devices to make it really efficient. Asked what the cost of power was with the elaborate plant described in the report, the chairman of the committee said it was 2 to 3c. per kw.-hr., but that it would be lower if the plant were run to capacity.

Discussing this statement someone asked: "Why pay 2 or 3c. for your own power when you could buy it of a power plant for 1½c.?" Mr. Woltz said his company purchased a million and more kilowatt hours per month. It used 3,500 kw. normally and up to 5,000 kw. at peak loads. So far the company had not seen fit to put in its own plant, though failure to sell "bug dust" and "rash" might change the company's policy.

M. A. Maxwell said he had been salesman for purchased power but was now a consumer, but his leaving the power-plant business had not changed his ideas. He still believed in purchased power. Most companies, he said, grow from year to year. Their first mine is operated by a direct-current plant. Some time later they will open another plant some six miles or thereabouts further up the creek. To put in a direct-current plant at that point would be an undesirable expense, as one alternating-current plant would serve both places.

They could have erected this in the first instance, but it would have been running at half capacity and would have been wasteful. A lot of money would have been tied up without commensurate result. Purchased power would be a flexible arrangement that would run the first and both plants with a maximum efficiency and minimum cost.

Mr. Maxwell further said that a coal company usually finds it quite difficult to finance a really good central-station plant, and when it has been financed, unless it is assured of a near-capacity load from the first, the costs of power production are loaded with an immense overhead. Most coal companies omit depreciation and interest in calculating power costs. They can produce power under those circumstances almost as low as they can buy it, but what of it? The depreciation and interest charges have inevitably to be met.

E. D. Knight said that the converting ratio at the purchased-power plant was closer than in the private plant. Josiah Keeley, general manager of the Cabin Creek Consolidated Coal Co., said that his company paid normally \$4,000 to \$5,000 a month for purchased power. Yet the cost was barely \$1,000 a month less when the mines stood idle. It looked like a poor contract to him. C. E. Rogers, however, showed that conditions were little better in the private plant and put the accompanying table on the blackboard.

RELATION OF POWER PER TON AND POWER COST TO COAL OUTPUT AND POWER GENERATED

Month, 1921	Tons Produced	Kw.-Hr. Produced	Kw.-Hr. per Ton	Cost per Ton, Cents
January.....	18,488	104,940	5.11	9.80
February.....	14,104	109,290	7.75	12.70
March.....	23,465	121,660	5.18	9.20
April.....	38,665	140,610	3.64	6.46
May.....	69,709	183,770	2.64	4.30
June.....	69,456	181,560	2.60	4.60
July.....	59,807	189,145	3.16	5.00
August.....	66,762	184,630	2.77	4.93

One of the members declared that when the coal produced was cut one-half, the power bill dropped to nine-tenths of that which was normally for full tonnage.

THIRTY-THREE MEN INDICTED FOR WILLIS BRANCH SHOOTING.—Five officials of District No. 29 of the United Mine Workers of America and twenty-eight others were indicted Sept. 22 for "attempt to commit murder and conspiracy" in connection with the "shooting up" of the Willis Branch plant several months ago. This has nothing to do with the Mingo troubles except that its success in driving everyone away from the mine emboldened the Mingo strikers to try the same tactics along the Tug River. The men indicted are John Sprouse, president of District 29; James Gilmore, board member and former president; Frank Williams, George Barrett and Tony Stafford.

The Weather Vane of Industry

News Notes Chronicling the Trend of Industrial Activities on Which Depends the Immediate and Future Market for Coal

GAINS thus far made in industrial activity are real, and there is steady progress toward better business, according to a bulletin reviewing current market conditions issued Sept. 21 by the National Bank of Commerce in New York. "With the exception of cotton," the bulletin continues, "the crops are reasonably good, and their movement is being reflected in an improved banking position as farmers' obligations are liquidated. Cotton mills, the wool manufacture, and the boot and shoe industry are all holding their improvement of recent months. Although the steel industry is operating at about one-third of capacity, production of both pig iron and steel made fair gains in August. Orders are small, but they have come from widely diversified sources, both geographically and as to consuming industries. Many other industries report slight betterment, and building activity is being remarkably well maintained throughout the country.

"Because of uncertainty as to what the consumer can and will buy, retailers generally are ordering with great caution, while many wholesalers in turn are refraining from placing advance orders. The adoption, at any stage from manufacturer to consumer, of a policy directed toward generally higher prices to the consumer will not only curtail buying but will result in slowing down the gratifying progress already made.

"Large classes of labor have taken their losses by severe wage cuts. Among those which have accepted them have been many skilled crafts which have seen that in the long run wages on the new basis will have a purchasing power equivalent to that when wages were higher.

"Certain classes of labor contrast unfavorably, however, with labor as a whole. The time is not far distant when not only that uncertain group known as the 'general public' but those sections of it consisting of other classes of workers and farmers will have come to a realization that labor pays its own wages, which are ultimately measured not in money but in goods."

Clothiers Predict Trade Revival

In his address at the opening of the eighth annual convention of the National Association of Retail Clothiers, Sept. 20, at Rochester, N. Y., Andreas Burkhardt, of Cincinnati, president of the association, expressed the belief that American business had turned the corner to the upward grade. The press was charged with fostering the so-called buyers' strike and the protective tariff was said to favor the large manufacturer at the expense of the consumer.

Car Loadings Fall, Due to Holiday

Observance of Labor Day throughout the country resulted in a reduction in the number of cars loaded with revenue freight during the week which ended on Sept. 10, compared with the previous week, according to reports received from the American Railway Association. The

total for the week of Sept. 10 was 748,118 cars, or 82,483 less than the preceding week and 135,297 cars under that for the corresponding week last year. It also was 198,852 cars less than were loaded during the corresponding week in 1919.

Trade Slump Ended, Credit Men Say

Directors of the National Association of Credit Men, meeting at Atlantic City, Sept. 20, expressed the belief that the bottom of business depression has been reached, but declared that everyone must put his shoulder to the wheel before the nation begins to see a rising tendency in business. A resolution laid down principles for business credit, and the association will be asked to adopt them. These declare that idleness accentuates the business trouble and that everyone must work, live substantially and thriftily and get back to prosperity.

70 Steel Mills Start in Ohio

Several thousand men were back at work during one of the most active weeks in six months in the steel mills in the vicinity of Warren, Ohio, beginning Monday, Sept. 19. By the end of the week seventy mills were in operation. Six sheet mills were started by the Trumbull Steel Co. Monday morning and the remaining six Tuesday. Sixteen tin mills also were operated at this plant, six starting Sept. 19 and ten on the following day. At the Western Reserve Plant six of the eight hot mills were started Tuesday. At Newton Falls the Newton Steel Co. ran in full, operating ten hot mills. In Niles twenty-six mills were in operation, while sixteen remained idle. The Falcon Steel Co. started five of its eight sheet mills Monday morning. All of the Thomas twelve steel mills were in operation for the first time this year, and nine of the ten hot mills at the Republic Iron & Steel Co. plant were running.

New York Industrial Outlook Poor

Reports made public by Henry D. Sayer, State Industrial Commissioner of New York, indicate no promise of a revival in manufacturing this fall. No consistent improvement in industrial activity for August was noted, while employment conditions in 1,600 factories, carrying a total of 400,000 workers on the payroll, were said to be at a standstill. Increased activity in August occurred chiefly in the preparation of food products, in textiles, paper manufacturing and in the shoe and leather goods industries. Employment conditions were better in paper manufacturing, textile, shoe and leather, sugar refining, confectionery and food products industries. Reductions in employment were made in the clothing industries and in the manufacturing of beverages, metal goods, cement, chemicals and drugs.

Cotton Mills Ready to Resume

After a suspension of nine months, the Pocahontas and the Matoaca cotton mills, Petersburg, Va., two of the largest textile plants in that section of the state, were prepared Sept. 12 to resume operations as soon as there was sufficient water in the Appomattox River to supply power. Orders are being received in increasing numbers, it was said, and full-time operations are contemplated.

Ford Plant Cuts Off a Work Day

Effective immediately, the Highland Park (Detroit) plant of the Ford Motor Co., will operate on a five-day basis, according to a statement issued Sept. 17. No announcement was forthcoming as to reasons for the curtailment.

Anthracite Operators' Advertising Campaign to Show That Producers' Profits Are Modest

UNDER the caption "Advertising a Necessity" the September issue of the *Coal Merchant*, the organ of the National Retail Coal Merchants' Association, Philadelphia, states:

"By the time this issue of the *Coal Merchant* reaches you, you will have probably noticed in the press the advertisements of the anthracite operators.

"The General Policies Committee of the Anthracite Operators has started a campaign which will run in the press for twelve weeks. It is their intention to inform the public that the profit of the anthracite operators on the sale of a ton of coal is very small. This will mean that the retailer will have to explain to the public the increase in the cost to the consumer. It will be necessary for the retail coal dealers to follow up the campaign of the anthracite operators, or the public will think that the retailers are getting huge profits, when, as a matter of fact, today 75 per cent of them are operating in red figures.

"The Board of Directors of our association has authorized the appointment of a committee, known as the Committee on Public Information, of which R. J. Wulff, of Brooklyn, N. Y., has been made chairman. That committee has made a report and it is printed herewith.

"As soon as the suggestions, in forms of advertisements, which the committee recommends for use in various localities, are received, all the members of our association will receive a copy of each of them. These advertisements should be printed in the local papers by either the local association or individual dealers.

"It is necessary that the retail coal merchant do some advertising, even though it be small, so as to explain to his customer exactly what his profit is. He should get in

advertising campaign which will cover a period of twelve weeks. We understand that it is their purpose to give the public information as to the cost of producing coal, which, of course, will tell the public what coal costs the retail distributor at the mines.

"It will be necessary for the retail distributor to place information before the public showing the necessity for the margin existing between the price of coal at the mines and the price charged the consumer delivered at his house door or in his bins.

"Different conditions prevail in every locality. Different costs of distribution are effective so that no set plan can be suggested by the 'Committee on Public Information' generally throughout the anthracite-burning territory.

"It is the purpose of the committee, however, to have distributed to every individual member of the organizations affiliated with the National Retail Coal Merchants' Association suggestions and forms of advertisements, which, with modifications, we hope will enable the individual dealer to work out this problem according to the necessities of the section in which he is doing business.

"State associations cannot outline a fixed plan which would be suitable at the same time for New York, Albany, Syracuse, Buffalo, etc., nor can the national association outline a plan which would be suitable at the same time for Chicago, Detroit, St. Louis, New York, Philadelphia, etc.

"Local organizations can perhaps work out some plan which will cover their own particular territories, but in the final analysis the individual dealer must be able to so an-

It's Your Right to Know if Coal Prices are Wrong

IS the price of anthracite coal unfair? The public is entitled to all the facts. Here are some of them as they relate to the price of anthracite at the mine. Others will follow.

Trace the course of a dollar spent today for anthracite. The price situation unfolds as you go forward. For example, the mine owner takes the dollar and puts it to work.

The first call upon it—and therefore mentioned first—comes from mine workers. They take approximately 65 cents of it for wages. Wages are fixed by the 1920 award of the U. S. Anthracite Coal Commission, decreeing that the scale remain in force until March 31, 1922.

Thirty five cents of the dollar is now available. To be spent how? Fifteen cents goes for various supplies necessary in maintaining the mine, its breakers and pumping plants. Not a penny of profit clings to the mine owner in these purchases.

The dollar now is down to twenty cents. These go for insurance, taxes, selling expense, depletion, depreciation of plant and equipment—and such uninsurable risks as strikes, mine fires and floods. What remains is the "margin" out of which the profit must come.

The U. S. Federal Trade Commission says: "Margin must not be confused with what is often called profit. Selling expense, interest, income and excess profit taxes, as well as other items, must be deducted from it before the net profit available for dividends or surplus from the operation can be determined."

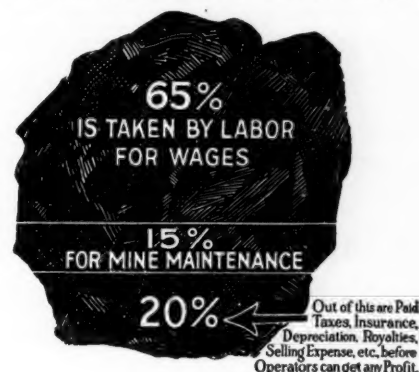
What Is the Anthracite Producers' Profit PER TON?

The facts as established by the U. S. Federal Trade Commission are published broadcast. They are known to all men. Anthracite owners' "margins," according to that authority were less than 39 cents per gross ton in 1918. This represented operations producing 95 per cent of the total tonnage of fresh-mined anthracite.

From 1913 to 1918 inclusive (covering the war period) the margin on which mine owners depended for profit was 42.8 cents per ton. From this had to be paid interest, selling expenses, Federal taxes, etc., before anything was available for dividends.

In other words, whatever the price you paid for coal—say \$7 to \$14—the mine owner on the average never retained more than 43 cents per ton on your total coal bill. This shows that there were no inflated war-time profits.

Today the average "margin" in the anthracite region does not exceed 60 cents a ton. The operator is fortunate whose margin approximates that figure. Only a few exceed it, most of them make less, and many are operating at a loss.



Why It Costs So Much To Mine Anthracite

WHAT natural resource so essential to public welfare and health demands such expense and effort to reclaim as anthracite coal? Obstacles must be overcome at every step of its progress from rock-ribbed fastnesses underground to our homes and factories. The miner's pick—the waiting railroad car—your local dealer's delivery cart—these are only a few of the links in the anthracite chain. Throughout its length, outlays of money and labor are required.

Explosives, air for ventilation, and timber in vast quantities are called for every day in the operation of an anthracite mine.

Fully as important as the unceasing use of these materials is the removal from the mine of tons of rock. Also thousands of gallons of water are pumped daily.

Mines use 50,000,000 pounds of explosives to blast out the 195 miles of tunnels and gang ways driven annually.

This tunneling, equal to the building of a double-track subway between New York and Philadelphia, is necessary in order to get at new supplies of coal.

For every ton of coal mined, 6,700 cubic feet of air must be forced into the workings by elaborate fan and blower systems.

Supporting props must be changed constantly. More than 300 feet of lumber is used for every carload of coal.

Water which gathers constantly in the mines must be kept down. This means costly pumping every hour in the 24.

On the average 18 tons of water are raised to the surface for each ton of coal produced—1,620,000,000 tons of water annually.

Even the ton of material coming up in the mine car often contains 33 per cent of slate and other refuse.

Of the remainder one-third of the coal is too small to use in homes, and is always sold at a loss.

As a result there is often less than ½ ton of coal-bin anthracite out of each ton of material mined and handled.

The cost of supplies and of the waste removed is additional to the cost of labor and the expense of converting in the breakers the crude coal into domestic anthracite.

FIRST AD. OF ANTHRACITE OPERATORS' SERIES
The photograph of a breaker which appeared at the top has been omitted

touch with the editors of the various local papers, and show exactly what the retail profit is on a ton of coal. In most every case, you will find the local editor is fair and will print your side of the story."

REPORT OF COMMITTEE ON PUBLIC INFORMATION

The report of the Committee on Public Information of the National Retail Coal Merchants' Association is as follows:

"The Board of Directors of the National Retail Coal Merchants' Association has authorized the appointment of a committee known as the 'Committee on Public Information.'

"The anthracite operators' association is projecting an

THIS IS THE SECOND OPERATORS' ADVERTISEMENT

alyze the gross margin which he adds to the cost alongside his plant as to leave no question in the minds of the consumers buying from him that the margin that he is charging is justified."

In a circular to members dated Sept. 22, J. E. O'Toole, executive secretary, sent out suggestions for copy to be used by the dealers in local papers as follow-up on the national campaign of the anthracite operators. In his letter Mr. O'Toole says:

"Advertising by the retailer is essential, and our Committee on Public Information, of which R. J. Wulff of Brooklyn, N. Y., is chairman, has suggested that the specimens enclosed be used. We would also suggest that where possible the retail coal dealer get in touch with the editor of his home paper, and show him that the retailer's margin is not his profit. We find that in the various investigations



Here's the Mine Part Of Your Anthracite Bill

IT IS HARD for the anthracite user to believe that somebody is not making a big profit on coal at say \$14 a ton. (It costs more in some parts of the country). But show him an itemized bill of mining costs and he is able to judge for himself concerning mine owners' profits. Here are the facts:

THE AVERAGE RECEIVED BY THE PRODUCER AT THE MINE FOR HIS TOTAL TONNAGE IS \$6.15

Only about 60 per cent of all anthracite (the domestic size, grate, stove, egg and nut) is sold at the mine at prices ranging from \$7.60 to \$8.60. Ten per cent is sold at \$6.00. The remaining 30 per cent is composed of the very small "steam" size, (buckwheat, rice and barley), and sells at an average of about \$2.25 a ton—much BELOW the average cost of production.

The average cost of producing a gross ton of run-of-mine anthracite, preparing it in 8 marketable sizes and loading on cars, at the present time is \$5.55. This cost is divided as follows:

Labor, per ton . . .	\$3.92
Materials	1.05
Insurance, taxes, selling expense, etc.	.58
	\$5.55

This cost applies alike to coal selling at the mine for \$7.50 a ton or more and to the small by-product sizes of coal selling as low as \$1.50 a ton.

Subtracting the average cost of production (\$5.55) from the average price at the mines (\$6.15), leaves a margin of 60 cents to the mine owner. Federal Taxes and interest on investment must be paid out of this 60 cents before any profit can be made.

The U. S. Fuel Administration found that anthracite mines have an investment of about \$8 per ton of annual production.

In an industry involving so much of hazard as the mining of coal, a return of 10% on the investment could not be considered excessive. This alone would permit 80 cents per ton profit—if anybody could make that much.

The figures show a cost of production making it absolutely impossible (after Federal taxes and interest on borrowed money are provided for) for the anthracite mine owner to make more than 50 cents a ton profit. Few exceed it, many make less and some are operating at a loss.

The difference between the mine price and the retail price is accounted for by freight charges and the cost of retail distribution, in the profits of which the anthracite producer does not share.

These sources further information can obtain by addressing:

ANTHRACITE General Policies Committee 437 Chestnut Street, Philadelphia

S. D. Warner, President,
Lefgh Coal & Navigation Co.

W. J. Richards, President,
Phila. & Reading Coal & Iron Co.

J. B. Kane, President,
Scranton Coal Company

Allen C. Dickson, President,
Western Dakota & Co.

D. B. Watts, President,
J. J. Worrell Co.

W. W. Taylor, President,
Clem Valley Coal Co.

C. F. Huber, President,
Lohr & Wilson-Berry Coal Co.

Perce C. Madison, President,
Madison Hill & Co.

John Markle, President,
Indiana-Holland Coal Company

W. L. Connelley, President,
Green River Coal Co.

John M. H. Mathers, President,
Lough Valley Coal Co.

W. A. May, President,
Pottsville Coal Company

William Collins, President,
Susquehanna Valley Coal Co.

S. B. Thorne, President,
Thorne, Nade & Co.

THE THIRD IN THE OPERATORS' SERIES, RELEASED THIS WEEK

being conducted the press gets the impression that the retailer's margin of two or three dollars, as the case may be, is his profit."

The copy suggestions, three in number, stress the inability of the dealers to lower prices because of labor and transportation costs and urge early purchase as a household economy. Waiting on lower prices for anthracite is termed speculation with household funds. The buyer is told that neither producers nor coal dealers are making any more money than they made when prices were lower. Other suggestions are to follow and it is intended to stir the local dealers to keep pace with the advertising of the producers.

Much Vaunted Dunbar Wage-Cut Plan Fails

THE so-called "Dunbar plan" of meeting the industrial situation by community action had its first setback last week, when 180 coal miners employed by the American Manganese Co. in the Connellsville region walked out after a demand for the Frick wage scale had been refused. The mines are idle but it is stated that they will not be closed

definitely until the attitude of the men becomes more clearly developed. In the meantime it is understood that fuel needs are being covered by open-market purchases.

The present wage scale at the manganese plants is approximately 30 per cent below that paid by other operators. The scale was put into effect last July 1 after conferences with plant officials, representatives of the men and merchants at Dunbar. At that time the men accepted the present scale and merchants reduced retail prices proportionately and company-house rents were reduced. Other departments of the manganese plant are operating.

Indiana to Settle Its Disputes According To Joint Wage Agreement

DIFFERENCES between miners and mine operators of the Glendora, Peerless and Star City mines in the Sullivan County coal fields of Indiana "are of such a nature as to permit of their consideration and adjustment according to the usual and proper procedures set forth in the joint wage agreement between mine workers and operators," according to a report submitted to Governor McCray by John Hessler, president of district No. 11, United Mine Workers of America, and P. H. Penna, secretary and treasurer of the Indiana Bituminous Coal Operators' Association, members of the Governor's arbitration committee. Mr. Hessler and Mr. Penna constitute an arbitration committee to make a "full and final settlement" of the disputes.

Despite the foregoing report, the Glendora coal mine, near Sullivan, Ind., which had been working about one week, is idle again, following the visitation to the mine of a vigilance committee, which ordered the night force to quit work. The force complied with the request, and although the mine whistle sounded for work in the morning, not a man appeared.

Southeastern Retail Coal Merchants Form Organization in Atlanta

HAVING as its purpose "the promotion of a closer relationship between operators, distributors and consumers," the Southeastern Coal Merchants' Association was organized Sept. 22 at a meeting held at Atlanta, Ga., and attended by retail coal merchants from six Southern states.

J. A. Yarbrough, of Charlotte, N. C., was elected president of the newly-formed association and R. R. Johnson and Thomas F. Stocks, of Atlanta, were elected members of the board of directors. Other officers elected were C. M. Farrar, Augusta, Ga.; W. T. C. Berlin, of Memphis, Tenn.; J. E. Mallory, of Anniston, Ala.; B. Elias, of Asheville, N. C., and H. R. Turner, of Greenville, S. C., vice-presidents, and J. G. Hancock, of Marietta, Ga., treasurer. Members of the board of directors elected were R. R. Johnson, of Atlanta; W. W. Comer, of Knoxville, Tenn.; B. R. Bobbs, of Athens, Ga.; Thomas F. Stocks, of Atlanta, Ga.; H. C. Duckett, of Greenwood, S. C.; S. R. Moore, of Charlotte, N. C., and W. J. Bramer, of Savannah, Ga.

Under the constitution the board of directors is empowered to elect a secretary of the association to devote his entire time to the work of the organization, at a salary of \$7,500 a year. A man thoroughly familiar with the coal trade in the Southern states will be chosen for the position, it is said. James S. McCarthy, of Philadelphia; Fred Gore, of Atlanta, and Grover Meinert, of Atlanta, were appointed by President Yarbrough to engage a suitable secretary.

A drive to increase the membership of the association to 1,500 merchants, headed by the secretary and other officers and directors of the association, is to be started soon. The initial membership of the organization comprises fifty-nine companies.

A prediction that within the next thirty days a convention of 1,500 coal men, representing all branches of the coal industry, will meet in Atlanta was made by Grover Meinert, a coal merchant. A resolution authorizing affiliation with the National Retail Merchants' Association was adopted by the association.

WEST VIRGINIA's miner troubles appear to be major ones. —Norfolk Virginian-Pilot.

Miners' Convention Spends Time in Strife; May Delay Scale Demand Till February

WHEN the International Convention of the United Mine Workers of America met on Tuesday, Sept. 20, at Indianapolis 1,500 delegates were present and all the district presidents except Ben Farrimond, of Washington, the state which as far as coal mining is concerned has just gone open shop. In his report President John L. Lewis attacked conditions in West Virginia and the indictment of 325 miners on murder charges, saying that the conditions in that state made it "obvious that justice cannot prevail."

He declared that no reduction in wage could be permitted, but recommended that the definite wage demands be formulated by a scale committee and be presented for adoption next February, to receive which the convention will assemble at that time. Mr. Lewis asked that Robert H. Harlin, of Seattle, Wash., and Frank Farrington, president of the Illinois district, who had, as Lewis alleged, issued false statements about the union, be rebuked by the convention.

He also asked the convention to endorse the International Board's action in requiring Alexander Howat to tell the Kansas strikers to return to work. Mr. Lewis requested the convention to reaffirm its declaration of two years ago in favor of nationalization of coal mines, and desired it to declare that a full test should be made as to the constitutionality of the Kansas Industrial Court.

The report of Secretary-Treasurer Green showed that the membership had reached 515,243—the greatest number ever reached by the United Mine Workers. He declared that the union had in cash \$486,820, or \$0.94 per member, or \$0.65 per mine worker, figuring the number of mine-workers at 750,000.

Philip Murray, international vice-president, and Lee Hall, of Columbus, chairman of the Scale Committee, both declared that wage reductions were unthinkable, but the constant reiteration seemed to spell out the fateful word "inevitable."

International President Lewis won his victory over District President Farrington when the convention ordered, Sept. 23, that an account be made of the \$27,000 expended in an unauthorized strike two years ago.

On Sept. 24 the convention was stirred into fury by the action of the Borderland Coal Co., which filed suit against the mine workers and operators. It was readily understood that the Clayton Act defended the mine workers against conspiracy when acting alone, but how when conspiring with operators? Was the check-off such a conspiracy and was it a conspiracy to say: We cannot pay such a wage so long as you accept a lower wage elsewhere? Samuel Gompers, president of the American Federation of Labor, who was present, said to Mr. Lewis: "John, in defence of that principle I would like to visit you in jail," which prospect for Brother John seemed to please the delegates, who shouted in approval.

John L. Lewis is using the declaration of the Borderland Coal Co. in its suit, that the mine workers' union will not keep its promises, as a means of compelling the delegates to line up behind the international officers in ordering the Kansas workmen back to work in fulfillment of their contract.

The meeting of Monday, Sept. 26, discussed the Howat issue, the Howat men being desirous of a vote, and Vice-President Murray, presiding officer, refused to permit the meeting to be stamped with a final decision.

J. B. Neale, Coal Operator, Among Ten More Named to Unemployment Conference

SECRETARY HOOVER announced Sept. 22 the addition of ten names to the list of conferees chosen to meet in Washington, Monday, Sept. 26, to discuss means of relieving unemployment. Among this latest group of delegates invited to take part in the conference is James B. Neale, president of the Buck Run Coal Co., Minersville, Pa., and vice-president of Thorne, Neale & Co., New York and Philadelphia.

Mr. Neale is the fifth representative of the coal industry to be asked to the unemployment conference, John T. Con-

nery, of Chicago; W. K. Field, of Pittsburgh, and E. M. Posten, of Columbus, Ohio, operators, and John T. Lewis, president of the United Mine Workers of America, having previously been named.

Unemployment Conference On; Committee On Emergency Measures in Mining Named

THE initial efforts of the unemployment conference at Washington are being directed to meeting the emergency needs of the unemployment situation. Simultaneously with this an exhaustive study will be made in order to bring out the exact facts concerning unemployment. Estimates of the number of unemployed vary from three million to five and one-half million and it is felt that reliable data as to the extent, geographical distribution and industrial distribution are imperative before relief measures can be put into effect.

Harry S. Robinson, of Los Angeles, who was chairman of the Bituminous Coal Commission of 1920, was appointed chairman of the important Committee on Organization of the unemployment conference. One of the principal committees appointed in the organization of the conference was one on "emergency measures in mining." At the time of this writing the chairman had not been selected, but the membership of the committee is as follows: John T. Connery, W. K. Field, John L. Lewis, J. Moore, James B. Neale, E. M. Posten, John D. Ryan, Miss Mary Van Kleeck, John P. White, Samuel A. Lewisohn and David L. Wing, the last named being appointed executive secretary.

After the emergency measures and the collection of statistics are completed the conference will be regrouped into committees whose function will be to recommend permanent measures whereby unemployment can be held at a minimum. Public hearings will be held every day this week at the same time that the work of the small specialized committees is progressing. These hearings are expected to result in a clear sizing up of the unemployment situation as it exists. It may throw an interesting light on the accuracy of previously accepted estimates.

The first public hearing was held Tuesday morning on the statistics of unemployment. F. I. Jones, of the employment service; Ethelbert Steuart, of the Bureau of Labor Statistics, and other witnesses were examined.

Developments in Colorado Coal Mines Unfavorable to Miners' Union

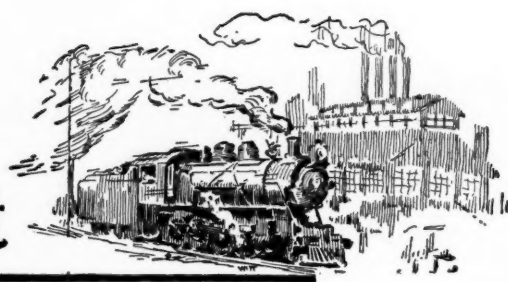
DEVELOPMENTS in connection with the idleness of union miners for twelve days in the mines of the Colorado Fuel & Iron Co. and their subsequent return pending a complete investigation show a tendency unfavorable to the union. The 1,000 miners refused to accept a 30 per cent reduction in wages, and failed to return to work. Since then the Victor-American Fuel Co., one of the largest in Colorado and the largest company having a union contract, has declared its intention to seek a reduction in wages if the present case is settled in a manner favorable to the Colorado Fuel & Iron Co.

Two coal companies of Colorado Springs have filed notices of wage reductions, and the State Industrial Commission is considering the feasibility of a "blanket hearing" to cover all of the wage-reduction petitions.

Statements purporting to come from John McLennan, president of the district miners' union, that the men would not be governed by the findings of the State Industrial Commission, and that a walk-out would be ordered in every mine where reduced wages were posted may give the union an avenue of escape. The announcement coming at this time is to impress upon the public an accepted version of the law that the commission's decision cannot be binding unless both sides agree to it beforehand. This would narrow the investigation of the commission. Wages would be eliminated. The only question remaining is whether the thirty-day notice clause was violated by the company, and whether the miners, in refusing to work, likewise disobeyed the law by failing to give the required notice.



Production and the Market



Weekly Review

AN INCREASE in the production of bituminous coal from 7,606,000 tons the first week of September to 8,139,000 tons the week of Sept. 17 marks the first sign of improvement in the trade since early summer. The gain in output had no corresponding effect on prices, *Coal Age* index of spot prices recording a decline of one point to 90 on Sept. 26, from 91 for the three previous weeks. A gain of a half million tons a week ordinarily would be a matter for special comment, but it has caused no stir either among sellers or buyers. Careful analysis of the situation on every side shows that one particular and one general condition have contributed to this gain in output.

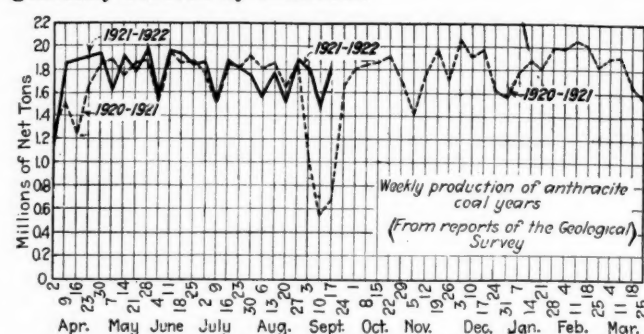
Throughout the large Eastern industrial region thousands of consumers, using one, two and three cars for a winter's supply, mainly for plant heating, are now buying because this is the time of year they normally buy. In other words, this type of buyer, individually and even in the aggregate of no great moment, represents the seasonal buying that has now begun.

IRON AND STEEL INDUSTRY CONSUMES MORE COAL

As against this general, to-be-expected autumn buying of coal in the East and the September rush for domestic sizes of soft coal in the West is the gaining strength of the iron and steel industry. Data published by the U. S. Geological Survey this week covering coal consumed in the manufacturing of coke, both beehive and byproduct, through August, confirm the figures of the *Iron Age* as to the gain in pig-iron production in August. It is strikingly brought out that the present idleness of the iron industry means in round numbers a million tons of coal a week not required and therefore not produced.

For some time producers of high-grade byproduct coking coal have been watching the dwindling piles of coke at the byproduct ovens, accentuated during the period last winter and this spring when oven operators

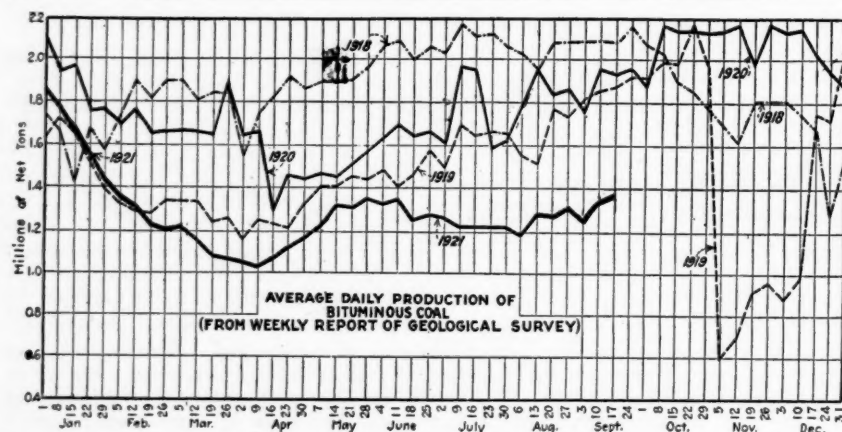
were reluctantly facing a shut-down. These stock piles are not yet gone, but are believed to be very much lower than they were two months ago. With the revival in the pig-iron industry the byproduct oven represents an opening market for good coal. The oven operators are not generally covered by contracts.



"All that is needed to put the coal industry back on a normal basis is the resumption of average production by the steel industry." This is the opinion of one of the best posted coal traffic men in the country. His analysis of coal loadings during the week ended Sept. 24 shows with all the exactness of carefully checked figures that coal movement would be in excess of 10,000,000 tons if the steel industry were taking its normal requirements. Plans being made for greatly increased production of iron ore, and the increased orders for steel being received, are regarded as propitious indications that the steel industry shortly will come into the market for increased coal supplies.

BITUMINOUS

With a 500,000-ton increase in production during the week ended Sept. 17 over the last preceding full-time week and a further increase noted in preliminary reports of the present week (Sept. 19-24) it is to be hoped that the coal industry has passed the bottom of the long decline in production.



Estimates of Production

(NET TONS)

BITUMINOUS COAL

Week Ended	1921	1920
Sept. 3 (a).....	7,606,000	11,167,000
Sept. 10 (b).....	7,069,000	10,685,000
Sept. 17 (b).....	8,139,000	11,654,000
Daily average.....	1,356,000	1,945,000
Calendar year.....	279,881,000	376,735,000
Daily av., calendar year.....	1,275,000	1,713,000

ANTHRACITE

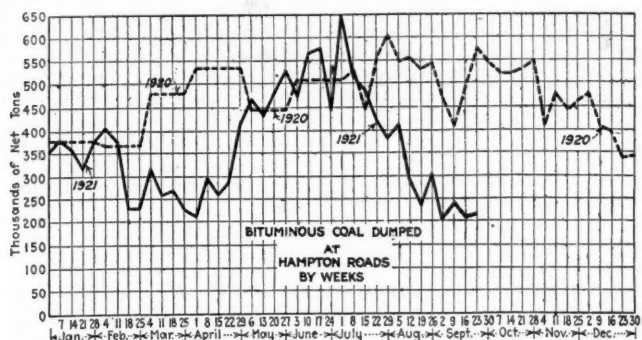
Sept. 3 (b).....	1,800,000	1,114,000
Sept. 10 (b).....	1,508,000	562,000
Sept. 17 (a).....	1,837,000	718,000
Calendar year (a).....	63,945,000	62,337,000

BEEHIVE COKE

Sept. 10 (b).....	60,000	438,000
Sept. 17 (a).....	63,000	403,000
Calendar year.....	3,962,000	15,293,000

(a) Subject to revision. (b) Revised from last report

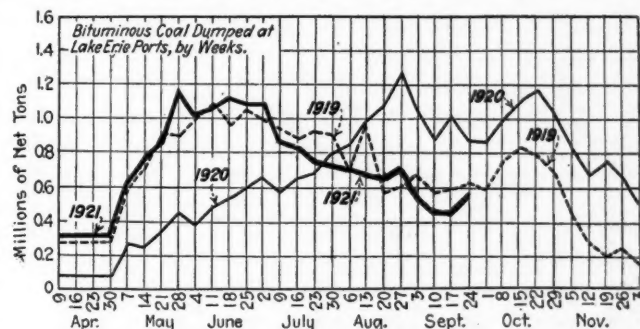
Steam demand is unable to absorb the heavy offerings in the Middle West, where the production of resultant sizes has been greatly increased by the making of domestic coal for trade. High-grade southern Illinois screenings have been going at 90c., with the end not yet in sight.



In New England, the all-rail fuels, outside the widened territory now served coastwise from Hampton Roads, are being quoted at slightly higher figures, while the smokeless varieties have ceased their downward trend. However, the improvement cannot be permanent with the present condition of New England industry, and the outlook for October is not particularly encouraging. Movement all-rail-shows no appreciable change—2,530 cars during the

week ended Sept. 17—from the second week in September, when 2,470 cars went forward.

The export market remains at a standstill, following the onslaught of British shippers to regain ground lost during the strike. Total exports during the week ended Sept. 17 were only 35,932 net tons, while bunkers ran 38,057 tons. Total dumpings for all accounts at Hampton Roads during the week ended Sept. 22 were 197,197 gross tons, a slight increase when compared with the preceding week.



A decided improvement is noted in the movement of dock coal from the Head-of-the-Lakes. With shipments to the interior on a larger scale more dock space has been made available to receive Lake cargoes. A late spurt has taken place in this trade and dumpings for the week ended Sept.

Current Quotations—Spot Prices, Bituminous Coal—Net Tons, F. O. B. Mines

Low-Volatile, Eastern		Market Quoted	Aug. 23, 1921	Sept. 13, 1921	Sept. 20, 1921	Sept. 27, 1921†
Pocahontas lump.....	Columbus.....		\$5.25	\$5.20	\$4.90	\$4.75@ \$5.00
Pocahontas mine run.....	Columbus.....		3.10	3.15	2.75	2.50@ 2.75
Pocahontas screenings.....	Columbus.....		2.45	2.45	2.20	1.95@ 2.25
Pocahontas lump.....	Chicago.....		5.00	4.95	4.75	4.50@ 5.00
Pocahontas mine run.....	Chicago.....		2.75	3.10	2.95	2.40@ 3.85
*Smokeless mine run.....	Boston.....		5.45	5.00	5.05	4.75@ 5.00
Clearfield mine run.....	Boston.....		1.75	1.95	1.95	1.65@ 2.15
Cambria mine run.....	Boston.....		2.45	2.35	2.35	2.00@ 2.70
Somerset mine run.....	Boston.....		1.60	1.75	1.75	1.45@ 2.10
Pool 1 (Navy Standard).....	New York.....		3.20	3.40	3.25	3.00@ 3.50
Pool 1 (Navy Standard).....	Philadelphia.....		2.95	2.95	3.10	2.90@ 3.25
Pool 1 (Navy Standard).....	Baltimore.....		2.50	2.90	2.75	2.75@ 2.85
Pool 9 (Super. Low Vol.).....	New York.....		2.55	2.60	2.40	2.35@ 2.75
Pool 9 (Super. Low Vol.).....	Philadelphia.....		2.35	2.35	2.40	2.25@ 2.50
Pool 9 (Super. Low Vol.).....	Baltimore.....		2.30	2.50	2.40	2.20
Pool 10 (H. Gr. Low Vol.).....	New York.....		2.35	2.30	2.20	2.15@ 2.45
Pool 10 (H. Gr. Low Vol.).....	Philadelphia.....		2.05	2.05	2.05	1.90@ 2.15
Pool 10 (H. Gr. Low Vol.).....	Baltimore.....		2.15	2.20	2.15	2.25@ 2.35
Pool 11 (Low Vol.).....	New York.....		2.05	2.15	1.90	1.75@ 2.00
Pool 11 (Low Vol.).....	Philadelphia.....		1.80	1.80	1.80	1.75@ 1.90
Pool 11 (Low Vol.).....	Baltimore.....		1.85	2.00	2.00	2.10
High-Volatile, Eastern		Market Quoted	Aug. 23, 1921	Sept. 13, 1921	Sept. 20, 1921	Sept. 27, 1921†
Pool 54-64 (Gas and St.).....	New York.....		1.95	1.90	1.85	1.75@ 2.00
Pool 54-64 (Gas and St.).....	Philadelphia.....		1.70	1.70	1.70	1.65@ 1.80
Pool 54-64 (Gas and St.).....	Baltimore.....		1.65	1.70	1.70	1.50@ 1.90
Pittsburgh sc'd gas.....	Pittsburgh.....		2.70	2.65	2.65	2.55@ 2.75
Pittsburgh mine run (St.).....	Pittsburgh.....		2.10	2.25	2.20	2.20@ 2.25
Pittsburgh slack (Gas).....	Pittsburgh.....		1.70	1.70	2.15	2.00@ 2.25
Kanawha lump.....	Columbus.....		3.45	3.45	3.45	3.00@ 3.65
Kanawha mine run.....	Columbus.....		2.15	2.15	2.15	1.75@ 2.25
Kanawha screenings.....	Columbus.....		1.55	1.30	1.20	1.25@ 1.30
Hocking lump.....	Columbus.....		3.15	3.20	3.25	3.00@ 3.50
Hocking mine run.....	Columbus.....		2.15	2.15	2.15	2.00@ 2.25
Hocking screenings.....	Columbus.....		1.60	1.25	1.20	1.10@ 1.25
Pitts. No. 8 lump.....	Cleveland.....		3.25	3.25	3.25	3.00@ 3.50
Midwest		Market Quoted	Aug. 23, 1921	Sept. 13, 1921	Sept. 20, 1921	Sept. 27, 1921†
Pitts. No. 8 mine run.....	Cleveland.....		\$2.30	\$2.25	\$2.15	\$2.00@ \$2.15
Pitts. No. 8 screenings.....	Cleveland.....		1.85	1.60	1.55	1.50@ 1.65
South and Southwest		Market Quoted	Aug. 23, 1921	Sept. 13, 1921	Sept. 20, 1921	Sept. 27, 1921†
Franklin, Ill. lump.....	Chicago.....		3.55	3.65	3.65	3.50@ 4.05
Franklin, Ill. mine run.....	Chicago.....		2.80	2.95	2.90	2.40@ 3.50
Franklin, Ill. screenings.....	Chicago.....		1.90	1.95	1.90	0.80@ 2.65
Central, Ill. lump.....	Chicago.....		2.50	2.70	2.70	2.40@ 3.00
Central, Ill. mine run.....	Chicago.....		2.40	2.40	2.40	2.09@ 2.75
Central, Ill. screenings.....	Chicago.....		1.65	1.65	1.60	0.90@ 2.25
Ind. 4th Vein mine run.....	Chicago.....		2.95	2.95	2.95	2.35@ 3.50
Ind. 4th Vein mine run.....	Chicago.....		2.50	2.55	2.40	2.00@ 2.75
Ind. 4th Vein screenings.....	Chicago.....		1.60	1.70	1.65	1.00@ 2.15
Ind. 5th Vein mine run.....	Chicago.....		2.75	2.90	2.90	2.50@ 3.25
Ind. 5th Vein screenings.....	Chicago.....		2.40	2.50	2.40	2.00@ 2.75
Ind. 5th Vein screenings.....	Chicago.....		1.75	1.75	1.65	0.90@ 2.15
Standard lump.....	St. Louis.....		2.65	2.65	2.75	3.00@ 3.25
Standard mine run.....	St. Louis.....		1.85	1.95	1.95	1.85@ 2.00
Standard screenings.....	St. Louis.....		1.00	0.75	0.60	0.40@ 0.60
West Ky. lump.....	Louisville.....		3.25	2.75	2.75	2.40@ 3.25
West Ky. mine run.....	Louisville.....		2.65	2.25	2.25	2.00@ 2.50
West Ky. screenings.....	Louisville.....		1.65	1.30	1.25	0.75@ 1.60
Big Seam lump.....	Birmingham.....		3.75	3.75	3.75	3.25@ 4.25
Big Seam mine run.....	Birmingham.....		2.15	2.15	2.15	2.00@ 2.25
Big Seam (washed).....	Birmingham.....		2.40	2.40	2.40	2.25@ 2.50
S. E. Ky. lump.....	Louisville.....		3.65	3.50	3.50	3.50@ 3.75
S. E. Ky. mine run.....	Louisville.....		2.35	2.15	2.15	2.00@ 2.40
S. E. Ky. screenings.....	Louisville.....		1.55	1.50	1.50	1.40@ 1.60
Kansas lump.....	Kansas City.....		5.75	5.75	5.75	5.75
Kansas mine run.....	Kansas City.....		4.25	4.25	4.25	4.00
Kansas screenings.....	Kansas City.....		2.50	2.50	2.50	2.40

*Gross tons, f.o.b. vessel, Hampton Roads.

†Advances over previous week shown in heavy type, declines in italics.

Current Quotations—Spot Prices, Anthracite—Gross Tons, F. O. B. Mines

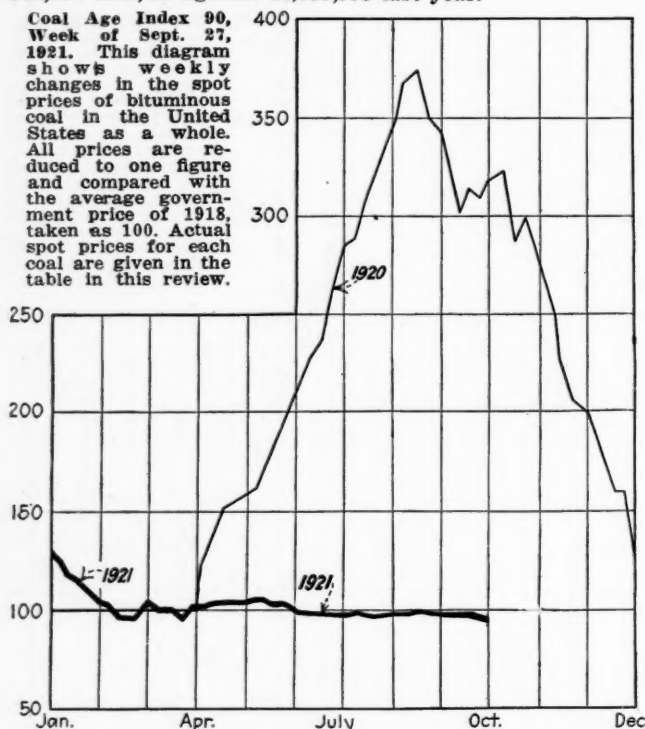
	Market Quoted	Freight Rates	Sept. 13, 1921		Sept. 20, 1921		Sept. 27, 1921†	
			Independent	Company	Independent	Company	Independent	Company
Broken.....	New York.....	\$2.61		\$7.60@ \$7.75		\$7.60@ \$7.75		\$7.60@ \$7.75
Broken.....	Philadelphia.....	2.66	\$7.60@ \$8.20	7.75@ 7.85	\$7.60@ \$8.20	7.75@ 7.85	\$7.60@ \$8.20	7.75@ 7.85
*Broken.....	Chicago.....	5.62	12.75	12.65	12.75	12.65	13.40	12.80
Egg.....	New York.....	2.61	7.75@ 8.25	7.60@ 7.75	7.75@ 8.25	7.60@ 7.75	7.75@ 8.25	7.60@ 7.75
Egg.....	Philadelphia.....	2.66	8.10@ 8.35	7.75@ 7.85	8.10@ 8.35	7.75@ 7.85	8.10@ 8.35	7.75@ 7.85
*Egg.....	Chicago.....	5.62	12.80	12.65	12.80	12.65	13.40	12.80
Stove.....	New York.....	2.61	8.25@ 8.50	7.90@ 8.10	8.25@ 8.50	7.90@ 8.10	8.25@ 8.50	7.90@ 8.10
Stove.....	Philadelphia.....	2.66	8.25@ 8.60	8.00@ 8.35	8.25@ 8.60	8.00@ 8.35	8.25@ 8.60	8.00@ 8.35
*Stove.....	Chicago.....	5.62	13.40	12.90	13.40	12.90	13.40	12.90
Chestnut.....	New York.....	2.61	7.75@ 8.25	7.90@ 8.10	7.75@ 8.25	7.90@ 8.10	8.00@ 8.25	7.90@ 8.10
Chestnut.....	Philadelphia.....	2.66	8.20@ 8.75	8.05@ 8.25	8.20@ 8.75	8.05@ 8.25	8.20@ 8.75	8.05@ 8.25
*Chestnut.....	Chicago.....	5.62	13.10	12.90	13.10	12.90	13.40	12.90
Pea.....	New York.....	2.47	5.00@ 6.00	6.05@ 6.45	5.00@ 6.00	6.05@ 6.45	5.00@ 5.75	6.05@ 6.45
Pea.....	Philadelphia.....	2.38	4.50@ 5.50	6.15@ 6.25	4.50@ 5.50	6.15@ 6.25	4.50@ 5.50	6.15@ 6.25
*Pea.....	Chicago.....	5.62	11.10	11.00	11.10	11.00	12.40	11.15
Buckwheat No. 1.....	New York.....	2.47	3.00@ 3.50	3.50	2.75@ 3.50	3.50	2.75@ 3.50	3.50
Buckwheat No. 1.....	Philadelphia.....	2.38	2.50@ 3.00	3.50	2.50@ 3.00	3.50	2.50@ 3.00	3.50
Rice.....	New York.....	2.47	2.00@ 2.50	2.50	2.00@ 2.50	2.50	1.80@ 2.15	2.50
Rice.....	Philadelphia.....	2.38	1.75@ 2.00	2.50	1.75@ 2.00	2.50	1.75@ 2.00	2.50
Barley.....	New York.....	2.47	1.25@ 1.50	1.50	1.25@ 1.50	1.50	1.25@ 1.50	1.50
Barley.....	Philadelphia.....	2.38	1.00@ 1.25	1.50	1.00@ 1.25	1.50	1.00@ 1.25	1.50
Birdseye.....	New York.....	2.47		2.50		2.50		2.50

*Prices and freight rates, net tons; quotations f.o.b. cars, Chicago.

†Advances over previous week shown in heavy type, declines in italics.

26 were 593,187 net tons—568,955 cargo and 24,232 vessel fuel—as compared with a total of 476,390 tons during the preceding week. Movement for the season to date is 18,362,857 tons, as against 14,838,993 last year.

Coal Age Index 90, Week of Sept. 27, 1921. This diagram shows weekly changes in the spot prices of bituminous coal in the United States as a whole. All prices are reduced to one figure and compared with the average government price of 1918, taken as 100. Actual spot prices for each coal are given in the table in this review.



ANTHRACITE

Production of hard coal during the week ended Sept. 17 was 1,837,000 net tons, indicating a prompt recovery from the slump during the preceding week, caused by Labor Day. There is more snap to the trade as autumn days approach and producers are well supplied with orders for family sizes.

Steam sizes are steadier and independent quotations in many cases are approaching circular prices. Movement of hard coal up the Lakes is declining, as shown by the dumpings of 72,400 net tons for the third week of September.

COKE

Production of beehive coke improved slightly during the week ended Sept. 17, when an output of 63,000 net tons was reported by the Geological Survey.

The total production of coke in the United States in August reached 1,650,000 net tons, according to the Geological Survey.

MONTHLY OUTPUT OF BY-PRODUCT AND BEEHIVE COKE IN THE UNITED STATES (a)

	By-product Coke	Beehive Coke	Total
1917 monthly average.....	1,870,000	2,764,000	4,634,000
1918 monthly average.....	2,166,000	2,340,000	4,706,000
1919 monthly average.....	2,093,000	1,638,000	3,733,000
1920 monthly average.....	2,505,000	1,748,000	4,313,000
June, 1921.....	1,410,000	232,000	1,642,000
July, 1921.....	1,285,000	181,000	1,465,000
August, 1921.....	1,402,000	248,000	1,650,000

(a) Excludes screenings and breeze.

In producing the August output of coke, it is estimated that 2,406,000 net tons of coal were consumed. Of the total, 2,015,000 tons were used in byproduct plants and 391,000 tons in beehive ovens.

ESTIMATED MONTHLY CONSUMPTION OF COAL FOR MANUFACTURE OF COKE

	Consumed in Byproduct Ovens	Consumed in Beehive Ovens	Total Coal Consumed
1917 monthly average.....	2,625,000	4,354,000	6,979,000
1918 monthly average.....	3,072,000	4,014,000	7,086,000
1919 monthly average.....	2,988,000	2,583,000a	5,571,000
1920 monthly average.....	3,685,000	2,758,000a	6,443,000
June, 1921.....	2,026,000a	367,000a	2,393,000
July, 1921.....	1,846,000a	286,000a	2,132,000
August, 1921.....	2,015,000a	391,000a	2,406,000

(a) Assuming a yield in merchantable coke of 69.6 per cent of the coal charged in byproduct ovens, and 63.4 per cent in beehive ovens.

Foreign Market And Export News

Coal Paragraphs from Foreign Lands

SPAIN—Very little business is being done on the Asturian coal market; sales are confined almost exclusively to screened and large descriptions. Unsold stocks are heavy and the smaller concerns are obliged to agree to important concessions in price. Best quality coal is selling at the following rates f.o.b. Gijón: Screened 80 pesetas, large 78 pesetas, small gas 52 pesetas, small steam 50 pesetas. For Barcelona, 3,000 tons have been accepted at 17 pesetas freight. The prices of Asturian coal are prevented from falling more quickly by the dearth of labor.

GERMANY—Production in the Ruhr region for the week ended Sept. 10 was 1,751,215 metric tons, according to cable advices to *Coal Age*. This is a slight increase as compared with the output of 1,741,810 tons for the week preceding.

AUSTRALIA—Industrial trouble at the mines, with recent dislocation of transportation, so reduced the output of com-

mercial coal that production for the rest of this year at least will not be more than equal to the home demand. It was in pursuance of the Government's protective policy that an embargo was imposed prohibiting the exporting of coal, according to *Commerce Reports*.

JAPAN—The coal market shows signs of recovery, due largely to diminution in stocks, according to a report to *Coal Age* from Tokio. Because of the attempt of many industries to economize in fuel consumption the demand for cheaper grades, coal dust especially, has greatly increased. At the end of July, stocks in Wakamatsu amounted to 212,600 tons of lump, 42,400 tons of uncleaned coal and 68,700 tons of coal dust. As compared with the preceding month, lump coal increased by 9,100 tons and coal dust decreased 9,800 tons.

SOUTH AFRICA—A crisis has arisen in the coal industry owing to the inability of the collieries to compete with Welsh coal prices at East African, Indian, and South American ports.

Coal and Coke Exports from the United States During August

Exports of bituminous coal were nearly two and one-half million tons less in August, 1921, than they were in August, 1920. The slump applies to every country on the list. Shipments to Canada were more than one-half million tons less than they were in August of last year. Movement of American coal to the United Kingdom has practically ceased. The detailed figures as reported by the Bureau of Foreign and Domestic Commerce, are as follows, in gross tons:

	August, 1920	August, 1921
Anthracite.....	555,406	373,005
Bituminous.....	4,108,782	1,695,090
Exported to:		
France.....	207,277	16,068
Italy.....	129,546	87,399
Netherlands.....	385,060	7,856
Sweden.....	283,296	10,394
Switzerland.....	54,520	
Canada.....	1,867,006	1,319,087
Panama.....		9,611
Mexico.....	17,994	13,604
British West Indies.....	27,473	7,856
Cuba.....	123,610	48,318
Other West Indies.....	8,444	7,355
Argentina.....	182,740	47,855
Brazil.....	111,317	43,419
Chile.....	18,925	1,022
Uruguay.....	30,039	
United Kingdom.....	2,735	2,442
Egypt.....		21,399
Denmark.....		3,887
Norway.....		12,487
Other countries.....	658,800	42,907
Coke.....	71,331	18,029
Imports:		
Anthracite.....	4,832	394
Bituminous.....	107,828	134,478

Weak Demand Makes British Operators Uneasy

Sharp Decline in Coal Output in United Kingdom Reported—French Mines Unable to Match British Prices—Hampton Roads Exports Dwindle

A cable to *Coal Age* states that production in the United Kingdom during the week ended Sept. 10 was 3,940,000 gross tons, a rather sharp decrease of 203,500 tons from the output for the preceding week. The decreasing demand is causing operators much uneasiness and several Welsh owners say they will close down when the subsidy ceases on Sept. 30.

Prices have shown a decided drooping tendency, and the coal market remains quiet, according to *Commerce Reports*. Accumulation of stocks at pit sidings is responsible for much short time in the mining districts. Tonnage exported shows a steady increase, with shading prices and declining freight rates. Within the past week the low freight of 15s. 6d. per ton was reported to have been accepted on a cargo of South Wales coal to Singapore. Some business is being placed for Norwegian and Swedish account.

The remarkable fall in the price of coal is intimately connected with British trade revival. Blast-furnace coke in its downward movement is rapidly approximating a figure that will enable ironmasters to restart their furnaces. Export prices have been cut to the uttermost farthing to regain markets lost to American competition.

The extension of the Government's export credit scheme to Italy should undoubtedly stimulate the exportation of British coal to that country. It is estimated that the export trade is already back to about two-thirds of its pre-war volume.

French Mines Unable to Meet Price of British Imports; Reparation Coal Reduced

The French Admiralty is inviting bids for the supply of 50,000 to 60,000 tons of large and small coals, delivery to be made over the next three months, according to cable advices to *Coal Age*.

The general position is still unchanged. There is hardly any business except in the household section where the demand is still rather brisk. The

position with regard to the inland navigation has slightly improved this week; a few barges were able to proceed to Paris and consequently less anxiety prevails with regard to coal supplies for next winter.

The Office des Houillères Sinistrées, which is the Government distributor for German Reparation coal, has reduced prices for coals shipped via Rotterdam, Antwerp and Ghent. These are now on an f.o.b. basis: Mine run 20@25 per cent large, 60 frs.; mine run 30@40 per cent large, 70 frs.; mine run 50 per cent large, 80 frs. These prices show a reduction of 10@15 frs. per ton.

An increase in imports is especially marked in the English section on account of the very low prices quoted; most of the French mines, particularly in the Nord and Pas de Calais districts which still have very high wages to pay on account of the abnormally high cost of living there, are at present unable to compete against these low offers. The French State Railways are reported to have purchased a fairly large amount of Cardiff first-class steams at as low as 90 frs. per ton c.i.f. which, taking the quality into account, is much better than any French mine could do at the present time.

Hampton Road Exports Continue to Decline; Bunker and Coastwise Trade Steady

Export business continues to dwindle, only two vessels taking coal for export, one of them with only part cargo for Trieste. Dumpings, however, this week were practically on a par with the previous week, due to the bunker business and the steady demand for coastwise coal.

Prices are varying more than usual, Pool 1 being bought in considerable quantities during the week for \$4.95. The Shipping Board bought a large quantity of Pool 2 for \$4.67, which is, however, somewhat below the ordinary cut rates, and being quoted in this instance for an unusually large order.

Coal trimming charges at the Hampton Roads piers may be reduced, as result of a conference here this week. Local interests contend that the trimming charges are too high, in comparison with neighboring ports, and ask the railroads to put Hampton Roads on a better co-operative basis. The railroads will make their decision when the new labor contracts are signed Oct. 1.

PIER SITUATION

	— Week Ended —	
	Sept. 15	Sept. 22
N. & W. Piers, Lamberts Point:		
Cars on hand.....	1,323	1,217
Tons on hand.....	67,680	69,024
Tons dumped during week.....	84,787	93,486
Tonnage waiting.....	13,500	11,850
Virginian Ry. Piers, Sewalls Point:		
Cars on hand.....	1,647	1,164
Tons on hand.....	82,350	83,200
Tons dumped during week.....	52,601	54,421
Tonnage waiting.....	2,000	8,200
C. & O. Piers, Newport News:		
Cars on hand.....	1,945	1,165
Tons on hand.....	97,000	83,250
Tons dumped during week.....	52,823	49,290
Tonnage waiting.....	1,100	2,845

Export Clearances, Week Ended Sept. 22

FROM HAMPTON ROADS		Tons
For Cuba:		
Cub. SS. Estrada Palma, for Havana.....		5,558
For Italy:		
Ital. SS. Guilia, for Trieste.....		2,000
FROM PHILADELPHIA		
For Cuba:		
Nor. SS. John Blumer, for Santiago.....		

Pier and Bunker Prices, Gross Tons (Foreign Bunker Quotations by Cable to Coal Age)

PIERS		Sept. 17	Sept. 24†
Pool 9, New York...	\$5.75@5.85	\$5.75@5.85	\$5.75@5.85
Pool 10, New York...	5.50@5.60	5.50@5.60	5.50@5.60
Pool 9, Philadelphia...	5.80@6.00	5.80@6.00	5.80@6.00
Pool 10, Philadelphia...	5.40@5.70	5.40@5.70	5.40@5.70
Pool 71, Philadelphia...	6.00@6.25	6.00@6.25	6.00@6.25
Pool 1, Hamp. Rds...	4.80@5.25	4.90@5.00	4.90@5.00
Pools 5-6-7 Hamp. Rds...	4.50@4.80	4.40@4.60	4.40@4.60
BUNKERS			
Pool 9, New York...	6.10@6.20	6.10@6.20	6.10@6.20
Pool 10, New York...	5.85@5.95	5.85@5.95	5.85@5.95
Pool 9, Philadelphia...	6.10@6.30	6.10@6.30	6.10@6.30
Pool 10, Philadelphia...	5.75@6.00	5.75@6.00	5.75@6.00
Pool 1 Hampton Roads...	5.15@5.25	5.00@5.10	5.00@5.10
Pool 2 Hamp. Rds...		4.80@4.90	4.80@4.90
Welsh, Gibraltar...	50s. f.o.b.	50s. f.o.b.	50s. f.o.b.
Welsh, Port Said...	64s. f.o.b.	64s. f.o.b.	64s. f.o.b.
Welsh, Singapore...	75s. f.o.b.	75s. f.o.b.	75s. f.o.b.
Welsh, Rio Janeiro...	75s. f.o.b.	75s. f.o.b.	75s. f.o.b.
Welsh, Algiers...	50s. f.o.b.	50s. f.o.b.	50s. f.o.b.
Welsh, Malta...	60s. f.o.b.	60s. f.o.b.	60s. f.o.b.
Welsh, Lisbon...	57s. 6d. f.o.b.	57s. 6d. f.o.b.	57s. 6d. f.o.b.
Welsh, La Plata...	70s. f.o.b.	70s. f.o.b.	70s. f.o.b.
Welsh, Madeira...	57s. 6d. f.a.s.	57s. 6d. f.a.s.	57s. 6d. f.a.s.
Welsh, Tenerife...	57s. 6d. f.a.s.	57s. 6d. f.a.s.	57s. 6d. f.a.s.
Welsh, Genoa...	58s. t.i.b.	58s. t.i.b.	58s. t.i.b.
Durham, Newcastle...	35s. @37s.	35s. @37s.	35s. @37s.
Belgian, Antwerp...	110 fr.	110 fr.	110 fr.

C.I.F. Prices, American Coal

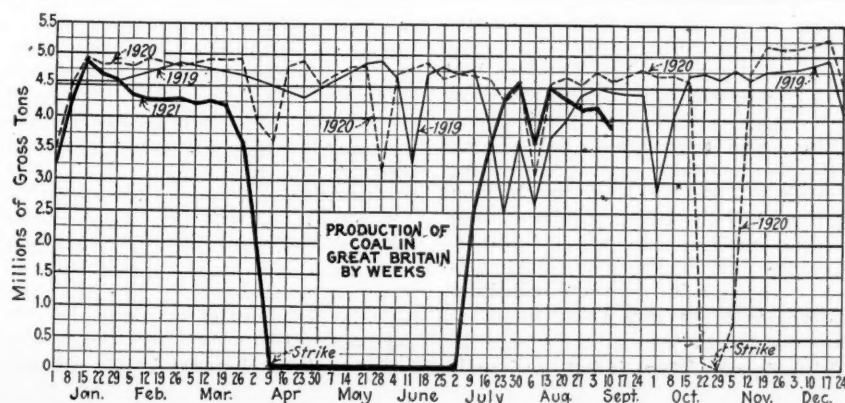
(In Gross Tons)		Sept. 17	Sept. 24†
		Low Vol.	High Vol.
River Plate.....	\$11.00	\$10.20	\$9.90
French Atlantic.....	9.65	9.20	9.10
United Kingdom.....	9.65	9.20	9.10
West Italy.....	9.85	9.40	9.30
Scandinavia.....	11.60	11.15	10.85
Cuba.....		6.10	7.40

These quotations are purely nominal and as far as can be learned, no business is being done in these markets.

Current Quotations British Coals f.o.b. Port, Gross Tons

Cardiff		Sept. 17	Sept. 24†
Admiralty Large.....	32s.	30s. @ 32s. 6d.	
Steam, Smalls.....	19s. 3d.	19s. @ 19s. 6d.	
Newcastle:			
Best Steams.....	29s.	28s. @ 30s.	
Best Gas.....	28s.	27s. 6d. @ 28s. 6d.	
Best Bunkers.....	27s. 6d.	27s. @ 28s.	

† Advances over previous week shown in heavy type, declines in italics.



Reports From the Market Centers

New England

BOSTON

No Sustained Improvement in Demand—All-Rail Coal Rather Spotty—Low Quotations at Tidewater Continue—Anthracite Demand Strengthens.

Bituminous—We are unable to report any very encouraging features of trade in this territory. Certainly there is nothing even approaching a horizontal improvement, for in most instances recent quotations have been on the same low levels that were characteristic early in the month. A few special grades, originating on the all-rail route, have been sold in small lots at prices that are slightly firmer, but these do not point to any significant development in the market as a whole. Certain industries, mostly small consumers, make a somewhat better showing, but the heavy users are eating into their reserve piles very slowly. There is no likelihood yet of any broad or sustained improvement in demand.

The railroads are so well stocked that effort is made to slow up rather than increase the flow of supply coal, and while there is a slight increase in general traffic it is so gradual that not yet has there been any effect upon consumption. With all the locomotive coals offering in such volume at low prices, and the railroad exchequers still in a state of depletion, it is small wonder that 60 to 90 days supply at the current rate of consumption is considered entirely adequate for the present.

In certain of the all-rail territory, well removed from the low prices prevailing in the district near Tidewater, there is a better request for spot shipment as well as for delivery extended over several months, but both as to price and locality the demand is spotty. Movement through the Hudson River junction points averages about the same as for the past thirty days, and no material increase is expected. It is proving a long, slow season for the Pennsylvania producers, but not yet is there any ground for more hopeful calculations that involve October output.

The Hampton Roads agencies are most assiduous in their attentions to buyers throughout what is now a rather broad Tidewater zone, and to a moderate degree they are getting results. Sales are reported from day to day, but the transactions are mostly for relatively small tonnages. Cargoes are being divided at the various railroad terminals, and more than a few reluctant buyers are being pressed to take

on coal at the low prices ruling. Marine freights continue on an easy basis, 90c. @ \$1.25, Hampton Roads to Boston, depending upon capacity, and apparently most of the factors are as free to offer deliveries some weeks ahead as they were in August.

Numerous purchases of Pool 1 Navy acceptable coal have been made lately at \$4.90 @ \$5 per gross ton f.o.b. vessel at Norfolk or Newport News, and mixtures of Pools 1 and 2 have netted as low as \$4.75. The recent bids to the Navy Department show how little expectation there is of much higher levels during the next few months, for off-shore the British shippers are again in position vigorously to contest European markets.

Anthracite—The way orders for domestic sizes have come in only confirms the feeling a week ago that the market has made a definite turn for the better. Not only are the companies well supplied with requisitions for October, but stove and chestnut are not being mined in sufficient volume to meet the spot demand.

Retail trade is picking up in most directions, especially in the larger cities and to the eastward where cooler nights have been making themselves felt, and broken, egg and pea, are the only sizes that can be shipped with reasonable promptness.

Tidewater—East

NEW YORK

Anthracite Market Active—Busy Fall Expected—Barley Scarce—Bituminous Quiet but Quotations Show Strength.

Anthracite—Demand for the domestic sizes is steadily increasing. There is a better feeling all around and the trade looks for a brisk market this fall. Increase in orders has driven the dealers into the market although their yards are well stocked. The heaviest increase has been in the call for chestnut. Some independent shippers are refusing orders for immediate delivery.

Independent quotations for stove have varied considerably. Some as high as \$9 were reported but the general high quotation was about 30c. lower.

The steam coals are in fair demand with rice and barley moving easier than buckwheat. Barley is scarce in some quarters and the better grades of independent coals are bringing full company circular. Independent buckwheat and rice are much easier and only in occasional instances are being quoted at company circular.

Bituminous—There is not much activ-

ity in the local market. Demand along the line is reported as slightly better. The general trend of opinion seems to be dullness for the next few weeks.

There was a slight increase in quotations for Pools 9 and 10 last week. This was accounted for by a fluctuation in the demand for these coals and the scarcity of Pool 11 during the early part of the week.

Consumers seem to be buying only their immediate requirements and then they want quick shipments. They do not appear to be stocking up though quotations are about down to rock bottom.

Careful watch is being kept of the car situation and any indication of trouble is expected to result in a rush of orders to be followed, very likely by the reopening of many mines that have been idle for some months.

Reports received at a prominent local house toward the end of the week indicates a revival of business in some industries near New York which if carried out to any great extent should increase the demand here. Inquiries are being received from consumers in nearby states who buy through local houses. The export situation is quiet, while the bunker demand has not been active.

PHILADELPHIA

Anthracite Demand Strengthens—Irrregular Sales Bother Retailers—Steam Coals Unchanged—Bituminous Demand Light—Better Grades Slowly Gaining.

Anthracite—In the city proper there seems to be some strengthening in the demand and all dealers are doing an increasing amount of business. Yet with this slight improvement there is a feeling of disappointment that the trade has not picked up much faster than it has, and on this account there is a continuation of price shading.

Pea coal has fallen off woefully in demand in sections where it used to be in much favor. Stove of course is the lone size that dealers urge, while egg is fast losing in demand. This scarcity of one large size as against a plentitude of another frequently brings forth the oft expressed wish of some dealers that the companies would adopt the two-size plan.

At this time there is much annoyance caused the retail trade by the increasing number of irregular shipments being made by smaller producers, both to industrial plants who endeavor to supply their employees with family sizes and deliveries from public sidings by teamsters. This has become particularly prevalent in the towns outside of the city.

Mine prices of both company and independents continue firm, except in occasional instances of individual pea; and while company figures are unlikely to be changed for October many look for substantial increases in independent coal.

Steam is unchanged in all respects,

with company buckwheat plentiful but firm at \$3.50, and independent coal \$3. There has recently been some tendency to better sales of rice, but barley is in exceptionally free supply.

Bituminous—There is no tone whatever to the trade, yet all interests continue hopeful that a demand will finally make its appearance soon. We believe it can be said that there has been an increase in inquiries of late and while orders are slow coming, it is really felt that there is some slight improvement.

The present low prices seem to be the very bottom and any increased buying in even small volume will move them upward. Even now the high-grade coals are better able to hold fast to current market quotations, with an occasional move forward on certain special grades.

Most of the business closed has been from small users, although a few of the larger iron plants, having depleted stocks of certain special coals, have placed a few fair-sized orders, especially of the better grade of gas coals.

The buyer certainly is seeking all kinds of advantage under present conditions and recently it has become the practice for the larger buyers with little or no contract engagements, to request the buyer to make a price for the current month.

BALTIMORE

General Business Improvement not Reflected in Coal Trade—Anthracite Improves a Little but Shortage Is Large.

Bituminous—The trade is in an uncertain state. In some cases there is a line of inquiry that seems to promise better results shortly, but this is offset again by absolute dullness in other lines. Everybody seems to be expecting things to happen now that fall is really here and business generally is reported as picking up a bit, but the concrete evidence of improvement is scarce.

Competition is so keen for all classes of business by those who have decided to keep up mine organization at any cost that even the best grades are selling at figures that should not be quoted. The export movement here is nil, the first half of September having recorded only three loadings, a total of 17,720 tons cargo and 2,455 tons bunker.

From the mining regions where the higher wage scales exist, come further reports of curtailment, a strange story at this season of the year when everything should be booming. The real trouble with the entire situation is that general business lacks confidence; and coal men say that should confidence return suddenly, or even fairly so, the demand for coal will far outstrip any possibility of immediate supply. All that is needed apparently is for a match of optimism to be set to the business world.

Anthracite—There is a little better tone of ordering reported. This is being reflected in a diminishing, to some extent, of the supplies in the local yards, which were over-large as com-

pared with past seasons, despite the small run of coal to Baltimore. Most of the dealers are up with orders now and are merely waiting for cold weather to force purchasing.

Meanwhile the shortage here from normal continues to grow. The trade is somewhat puzzled by the continued hold-off, but cannot see, even if the public holds down purchasing to the extreme, how the shortage of around 120,000 tons is to be made up in time if a really cold winter sets in.

BUFFALO

Decidedly Dull Bituminous Market—High Wages in the Way—Anthracite Moving More Slowly.

Bituminous—The situation does not improve. Road salesmen tell sad tales as to conditions. One of them says he was told lately that he was the fourteenth one who had called on a certain concern that day and it was only middle afternoon then. Another found in the interior of the state from one to four salesmen ahead of him, waiting for an interview with the manager. The salesman is being staved off if not killed off and the buying is kept at the bottom, both as to quantity and price.

There is a rumor that some of the larger operators are considering shutting down and waiting for the miners to offer a reduction of wages on their own account. This might be construed as not being a violation of the wage agreement.

Prices continue unsettled at \$3 for Youghiogheny gas lump, \$2.75 for Pittsburgh and No. 8 steam lump, \$2.50 for Allegheny Valley mine run and \$1.75@2 for slack, with \$2.36 added to Allegheny Valley and \$2.51 to other coals for freight.

Anthracite—Receipts are considerably less than they were, but the situation is not serious and besides it happens to be just a year from the strikes of 1920, so that the output is really much more than it was then. Nobody appears to be disturbed over the state of things. Canadian consumers are not coming into the trade to any extent and it is said that there is quite a concerted effort being made to cut down consumption on account of the price.

Lakes—Coal comes in so slowly that it is impossible to keep up to earlier records. The week's loadings total 72,400 net tons, of which 27,000 cleared for Duluth and Superior, 17,400 for Milwaukee, 10,500 for Port Arthur, 7,500 for Fort William, 7,500 for Ashland and 2,500 for Menominee (first of the season). Freight rates continue slack on account of a big surplus of tonnage at 65@70c. to Chicago, 65c. to Menominee, 60c. to Milwaukee, and 50c. to Duluth, Ashland, Port Arthur and Fort William.

Coke—The disturbed state of the market continues on account of labor difficulties in the Connellsville district. Prices are a trifle higher from light

supply, at \$4.25@\$4.50 for 72-hr. Connellsville foundry, \$3.35 for 48-hr. furnace and \$3 for stock, with a small amount of chestnut selling for domestic at \$4, all subject to an additional \$3.64, to cover freight.

Northwest

MILWAUKEE

Market Still Devoid of Seasonable Activity—Stove Anthracite Scarce—Lake Receipts Falling Off.

Notwithstanding the advent of autumn, the coal market is devoid of activity. Business is growing better, but buyers seem to have lost the sense of preparedness, and are letting things drift along. There is bound to be a sudden awakening with the first sharp frost.

Business now being done is mainly in anthracite. Stove is still scarce and many orders are unfilled. Dealers say there will be enough stove coal received to supply the demand before navigation closes. The soft coal market is dead, and will probably remain so until October, when the hotels and apartment houses begin to operate their heating plants to something like normal capacity. Industrial demand shows a slight improvement.

There is little danger of a coal or coke shortage during the coming winter. Receipts by Lake thus far during September aggregate 75,900 tons of anthracite, and 109,238 tons of soft coal, making the season's receipts to date 743,426 tons of anthracite, and 1,909,092 tons of soft coal, or 2,652,518 tons combined. This is 680,201 tons greater than during the same period last year.

DULUTH

Interior Market Improves as Lake Receipts Decline—Prices Firm—Shortage of Anthracite Stove.

Coal is now being shipped out from the majority of the docks here in as great or greater quantities than are being brought in by boat from Lake Erie ports, according to dock operators.

During the last week shipments to country dealers have increased in an even greater ratio than selling agents here had hoped. Many municipalities have also been ordering for electric and house-heating plants.

An appreciable decrease in the number of cargoes received was recorded last week when only sixteen ships arrived in the harbor, of which five carried anthracite. This is a falling off from last week when twenty-six cargoes arrived. The decrease is due to the shortage of bottoms because of the scarcity of down cargoes.

Bituminous prices are firm throughout the territory and operators foresee a strong market next spring. They are preparing to conserve stocks and are not sacrificing as they believe it possible that labor difficulties may cut down the supply here by the time winter is over.

A shortage has occurred in anthracite stove, due to a delay in shipments of this size. Sales are much larger, as a recent cold snap has convinced the public that the time has come to lay in a supply. Country dealers are ordering freely and are disposing of stocks as fast as they receive them.

MINNEAPOLIS

Leisurely Interior Movement—Steam Buyers Strike Continues—Domestic Orders in Smaller Lots—Outlook Improves.

Coal continues to move to the interior in fair quantities. As there is a good stock at the Head-of-the-Lakes, the Northwest is free from the worry which prevailed a year ago. But it is far from a guarantee that this winter will have another easy fall to precede and allow a gradual distribution of coal to serve. There will be no serious shortage. But unless there is a larger distribution to the interior, it may result that when cold weather strikes, many will be unprepared. Despite that situation, consumers are yielding most reluctantly.

Steam buyers are holding back as much as ever. Their success a year ago encourages them to hope for another this fall. Coal men say that there are sales being made now at prices which do not cover all expenses involved, and that it is simply impossible for costs to go any lower.

A year ago there were some extreme prices which had developed under the stress of the shortage. As the shortage was overcome, these undue prices yielded and declined. But everyone in the coal trade in the Northwest insists that there are no such extremes of cost now prevailing and so there is nothing on which a decline can occur, unless at a loss to someone.

In portions of the interior, there will be considerable reduction of domestic consumption through people turning to wood. It will not be feasible to use wood which has to be shipped for any distance, as freights would make the price too high. But where it can be obtained by team, and where farmers have wood available, there will be a greater wood consumption than for a long time.

Inland West

MIDWEST REVIEW

Domestic Cancellations Follow Milder Weather—Screenings Prices Tumble—Car Shortage Improving.

During the past few weeks we have interviewed a number of railroad officials in regard to the probabilities of a car shortage in the Middle West during the coming fall and winter. The opinion of these gentlemen is identical, namely, they believe when the domestic demand starts it will bring about a very decided car shortage, principally because so many cars are in bad order. Practically no repair work has been

done by the railroads, and more cars are proving faulty from the standpoint of equipment every day. Admissions from the railroad men interviewed bring to light the fact that the equipment on some of the Eastern roads doing business in the Middle West is in very much poorer shape than that of the roads operating only in the Middle West.

Instead of having seasonably cold weather, we have been experiencing a number of hot days. Coal which the retail trade ordered in the last of August and early September has arrived, bins are full, and the coal is not moving out to the householder. In addition, orders which were placed early in the month for shipment late in September, are being canceled. The number of these experienced by operators in the Middle West exceeds anything they have been up against since last January when the market broke.

Some of the best steam coals from southern Illinois experienced a very severe break this week. Two or three weeks ago the level for high grade Southern Illinois screenings was somewhere in the vicinity of \$1.25 a ton. During the past few days it has been no difficult feat at all to pick up this same coal around 90c. Some operators are maintaining their prices on domestic, but owing to the huge storage supplies of screenings on hand, they have cut their steam prices to a level which they believe will move the coal. It is openly predicted that steam coal may go to lower figures.

Some of the cleverest sales agents have refused to take on contracts for screenings calling for shipments between now and the first of April. The best price that can be obtained on a contract at the present time is somewhere in the vicinity of a dollar and seventy-five cents to two dollars a ton. This price is not attractive to the sellers as it does not represent cost of the coal at the mines. These sales agents believe there will be a very strong demand for steam coal around Jan. 1, when the manufacturers begin to discover there is going to be serious difficulty with the United Mine Workers around April 1. It is believed a scramble for steam coal will develop, and it has been freely predicted that good southern Illinois screenings will bring from \$3.50 to \$4 Jan. 15.

COLUMBUS

Fair Domestic Trade—Steam Business Is Extremely Slow—Prices Weaker—Lake Shipments Show Increase.

The domestic branch of the trade is purely a weather proposition. On colder days orders are more numerous than on the extreme warm days. Retailers are preparing for a more active demand with the first cold spell and are stocking up as a consequence.

The trade is showing a decided preference for the fancy grades such as Pocahontas, New River and splints. Retail prices are firm at former levels.

Lake trade is showing increased ac-

tivity after a lull of several weeks. The large portion of Lake shipments are now coming from West Virginia. The H. V. docks at Toledo during the week ended Sept. 17 loaded 114,944 tons, as compared with 74,090 tons the previous week, making a total of 3,263,687 tons for the season. This is far ahead of the records of last year, when 2,306,576 tons were handled by Sept. 18. The T. & O. C. docks during the same week loaded 35,615 tons as compared with 10,267 tons the previous week, making a total of 854,108 tons for the season.

Steam business shows no improvement. Resultant sizes are becoming a drug on the market. Outside of public utilities there is little demand for the smaller sizes. Requisitions of railroads are still small. Many manufacturing concerns are still provided with fairly large stocks.

The output in the Hocking Valley is varying between 22 to 27 per cent of normal. In the Pomeroy Bend field it is close to 30 per cent. Crooksville and Cambridge are producing about 25 per cent.

CINCINNATI

Spotty Market—Smokeless Coals at Lower Prices—Domestic Market Reviving.

A greater price variance was noted last week than for some time past. A few cool nights sent in orders for domestic coal, but this demand was soon filled and the edge of a slight increase in prices was soon worn off. There was much price cutting to effect sales, smokeless suffering just a degree worse than the bituminous. Lake business was featureless and so far as industrial requirements go, orders were few and far between.

Smokeless operators, with slack Tidewater business staring them in the face, turned their attention to the Inland market. Quotations, at the mines, were \$4.25@\$4.50 for lump; \$4@\$4.50 for egg; \$3.50 for nut and \$2.25@\$2.75 for mine run. An accumulation of slack has been showing and some of this sold as low as \$1.25, although the bulk of it was moving at \$1.50@\$1.75.

Bituminous slack also took a tumble, Kentucky selling \$1@\$1.10, West Virginia, \$1.20@\$1.30; mine run \$1.50@\$1.75. Kentucky lump and block was \$3@\$3.25 and West Virginia, \$2.75@\$3.

Retail business has been on the upgrade. Deliveries made were double this week over the first week of the month. There has been no corresponding drop in prices to parallel the wholesale slump and no change in prices since the last quotations in this column.

CHICAGO

Business Very Dull—Heavy Retail Stocks—Market Saturated with Smokeless—Labor Trouble Looms.

Old timers with many years experience in the Chicago trade venture the opinion that times have never been so dull as they are now. The steam market is extremely sluggish. The only

activities reported have been sales that were forced aggressively. The domestic market is in no better shape as the little flurry of business which we experienced a few weeks ago has come to a definite stop. Retailers report their yards full of coal with no demand.

Predictions of a serious coal shortage are now becoming more prevalent. Retail dealers are at last coming to their senses, and there is a movement on foot in Chicago to start an extensive publicity campaign advising the public exactly what the situation is and what the prospects are for domestic coal during the winter months.

Coal men are giving more and more thought as to what is going to happen on the first of April. It looks today as if the mine workers will absolutely refuse to take any reduction on the present scale. Another factor in the situation is the fight which is being staged between President John L. Lewis of the United Mine Workers, and Frank Farrington, president of the Illinois District of the United Mine Workers. The hard feeling between these two labor leaders has arisen over the expenditure of \$27,000 which Farrington authorized two years ago during the strike. The fact that some of the union officials are fighting among themselves is not going to help matters.

Prices on smokeless coals are holding firm in the wholesale trade. Eastern producers have found that the market has reached the point of saturation, and that further price cutting fails to stimulate sales. A great deal of Pocahontas coal has been moving into our market during the past thirty days with the result that practically all the retailers are well provided for. Anthracite is moving in a satisfactory way, and prices are holding firm at circular.

CLEVELAND

More Optimistic Feeling Prevails—Prices Unchanged—Spot Buying Increases.

Sentiment in the coal trade continues to improve, as signs of industrial betterment grow more pronounced, but actual closing of contracts for future needs is an infrequent occurrence as yet. Industrials are manifesting considerable interest in the market, while stocks are sufficiently low to compel increased hand-to-mouth buying. Large consumers are obtaining prices on coal for stocking purposes during the winter.

The coal trade is watching the general situation anxiously. The definite passing of the money tension and the declaration of Chairman D. C. Wills, of the Cleveland federal reserve bank, that banks should now loosen the credit reins and permit borrowers to abandon their policy of hand-to-mouth buying has given comfort to the trade.

Dealers in bituminous coal, believe that prices have struck bottom on the basis of present freight rates and wages. Receipts of bituminous coal during the week ended Sept. 17 were

1,159 cars, divided; industrial 792, retail 367. This is a decided increase over receipts of the previous week of 727 cars.

The Lake movement continues to slow up. The distribution of fuel into consuming channels in the Northwest, however, leads some to forecast that more coal may be sent to that quarter. In the meantime the slackened movement is resulting in curtailed mine operations in the Ohio district.

ST. LOUIS

Domestic Buying Starts Prices up—Steam off, with No Demand—Domestic Becoming Scarce.

Domestic business has started to pick up on some coals, and as a result the price of lump went up at the mine and the dealers had to raise their figures accordingly. The retail price, however, has only advanced 25c., but Standard 2-in. lump went up from \$2 to \$2.50 and 6-in. lump from \$2.50 to \$3@ \$3.25, while Mt. Olive and Cartersville mine prices will change on Oct. 1.

Most of the demand, however, is occasioned by country business for Standard coal. A fairly good tonnage of coke is being delivered to consumers.

The steam situation is bad everywhere. Standard screenings are down, with no takers in this market, and Cartersville screenings are reported as low as 75c., but are generally held at about 90c.@ \$1, with no demand.

In the last week several miscellaneous orders, principally railroad, have been placed for mine run in the Standard district. These prices range \$1.65@ \$1.75. The Wabash bought 600 cars with a low price of \$1.65@ \$1.75 for Standard, and it is understood that about 150 cars were placed in the Mt. Olive district for mine run that netted \$2.50.

Retail prices are: Cartersville, \$7.75; Mt. Olive, \$6.50; Standard, \$5.75; side-walk delivery.

DETROIT

Neither Steam Nor Domestic Trade Shows Seasonal Activity—Receipts Continue Light—Anthracite Distribution Also Sluggish.

Bituminous—Buyers are still holding back on either steam or domestic. Some of the wholesalers and jobbers are receiving a larger number of steam inquiries, but orders have not yet developed. A considerable part of the business seems to be in the way of offerings of bargain lots.

There is now in Detroit sufficient coal to provide for requirements, under normal conditions, for about 30 days. To guard against the depletion of retailers' stocks by a rush of buyers with the coming of the first winter weather, dealers are urging their customers to purchase some coal now, even if the order is not to exceed one ton.

Four-inch lump from Ohio is quoted \$3.25, 2-in. lump, \$3; egg, \$2.50; mine run, \$2 and nut and slack \$1.35. Three-

inch West Virginia splint is \$3.25, 2-in. lump, \$3; egg, \$2.50; mine run, \$2; nut and slack, \$1.50. Smokeless lump and egg is \$5, mine run, \$2.90 and nut and slack, \$1.60.

Anthracite—Household consumers are still holding off on stocking up. Retailers find that many of their customers who usually have their bins filled early in the summer are still without coal. The high prices are held responsible.

South

BIRMINGHAM

Market Conditions Weak and Unstable—Quotations Remain Unchanged—Some Increase in Production to Follow Resumption of Coke-Making.

There is still an absence of any marked activity in coal buying in the commercial field. Demand is reported light for all grades of steam fuel. Sales are still on a basis of immediate requirements and the demand is of an irregular and unstable character.

Weather conditions have been extremely unfavorable for an active domestic market, the heat for the month of September being the most oppressive for the same period in the last twenty-four years. Dealers consequently are taking on a minimum of contract quotas from the mines. Wagon mines in the environs of Birmingham are working steadily and supplying a large tonnage of domestic direct to consumers, which, in the majority of cases is medium or low-quality fuel and is sold somewhat under dealers' quotations for better grades.

Several mines that have been idle for months will again commence producing for coke-making at byproduct plants, some of which are scheduled to resume operations about Oct. 1. There will be considerable impetus given to mining operations with the beginning of another month, as iron-making will be more active with the placing in blast of four or five stacks which are now out of commission.

LOUISVILLE

Prepared Demand Increasing—Car Shortage Indicated—Screenings Weaker.

Reports of 70,000 fewer idle coal cars last week would indicate that industrial demand is picking up. More promising reports are being heard from the steel, gas and byproduct consumers, and utilities are beginning to buy a little better. Increased demand for prepared sizes, however, has not been offset by industrial demand for screenings, with the result that fine coal is weaker.

Prepared coals are a little firmer, operators working to get 25c. a ton more for prepared, to offset weakness in screenings.

That a car shortage is impending is the general belief. Cars are generally in bad repair, and flat bottoms are hard

to secure, although operators are not so generally asking a premium on flat bottom shipments as they were.

West

DENVER

Production Still Low—Seasonal Demand for Domestic—Slack Coal in Distress Position.

Seasonal buying has caused a slight increase in production. In August twenty-three counties in Colorado produced 777,329 tons. The output for the period, Jan. 1 to Sept. 1, however, still shows a decrease of more than 2,500,000 tons, in comparison with last year.

Slack coal is still weak, although the pickup in domestic trade and the first cool days of autumn are bringing hope of steadier sales. Slack is selling for 75c. in some instances.

Louisville lignite lump trade is increasing. The mine price of \$5.75 is within 25c. of the price of bituminous lump. Demand, however, is spasmodic, and there is some doubt as to whether lignite will continue to retail at \$9.75 and bituminous lump at \$10.75 for any length of time. The latter price must rise in order to keep up the lignite

sales, according to predictions. Routt County bituminous lump is \$6 at the mine and \$11.75 retail.

Canada

TORONTO

Anthracite Moving More Freely—Large Stocks on Hand—No Reduction in Canadian Freight Rates—Bituminous Continues Quiet.

Dealers report an appreciable increase in anthracite orders, although business is not nearly as active as usual at this season. Yards have large stocks on hand and a rush is anticipated as soon as cold weather sets in. The expectations entertained by some of a drop in price due to lessened freight rates have not been realized, the Canadian Railway Commission having decided to make no reduction at present. Conditions as regards bituminous show no change, demand still very light.

Quotations are as follows:

Retail		
Anthracite egg, stove, nut and grate.....	\$15.50	
Pea.....	14.80	
Bituminous steam.....	\$11.00@	\$11.50
Domestic lump.....	12.25	
Cannel.....	16.00	
Wholesale f.o.b. cars at destination		
1-in. lump.....	7.75@	8.50
Slack.....	6.00@	6.75

The price of both furnace and foundry coke has stiffened considerably and furnace is now quoted firmly \$3.35@ \$3.40 with some operators asking \$3.50 and even \$3.75. Foundry coke has a wide quotation of \$4.25@ \$4.75.

The Rainey interest is now operating all of its plants on a limited basis supplying coal only for its byproduct plant at Swedeland. The Nellie and Clarissa mines of the Corrado interests have resumed operations on a foundry coke order. These plants have a hundred ovens.

It is believed the change in the coke situation means the end of the worst and longest period of depression which the industry has seen in its history. Since Sept. 1 there has been an almost daily change in the situation as consumers came into the region with orders. The labor disturbance is held to be the principal cause for the increase in coke prices, but inability to get tonnage by consumers when they actually needed it for the first time in a year also contributed to the new price range.

CONNELLSVILLE

Byproduct Ovens Take Business Formerly Tributary to Connelville—Market Merely Steady.

The coke trade is feeling the competition of steel interests having byproduct coking plants which their own requirements now fall far short of engaging in full. At least one furnace coke contract, and perhaps one or two others, have been lost to the Connelville industry in the past ten days, by the underbidding of byproduct ovens. Operators suggest that consumers who have left the region may be inconvenienced later if the iron and steel industry picks up, for the byproduct ovens could not continue to serve them if it became necessary to operate the attached furnaces. No steel works has a surplus of byproduct coking capacity over the requirements of its own furnaces, and most of them are underbalanced in this respect.

The quotable market is not changed from a week ago, but it does not look altogether as strong and there is no distinct upward trend to be seen. A point that may be significant is that the last two fourth-quarter contracts made were at \$3.40 and \$3.25 respectively, and the \$3.25 contract was the later of the two.

It is held that the wage advance by independents means about 25c. per ton of coke, and thus should support a price of \$3.25, since before the advance the market had gotten down only to \$3 or \$2.90.

The *Courier* reports production in the week ended Sept. 17 at 14,400 tons by the furnace ovens and 26,970 tons by the merchant ovens, a total of 26,970 tons, an increase of 1,100 tons.

CENTRAL PENNSYLVANIA

Better Production Rate Predicted—Non-Union Mine Cost Enables Lower Quotations.

If the production of coal for the remaining months of 1921 is at the same rate as for the first eight months, the

News From the Coal Fields

Northern Appalachian

ANTHRACITE

Chilly Weather Increases Demand—Men Seek to Reopen Mines Closed by Kohler Law.

With the advent of chilly weather there has been an increase in demand and all companies have been working full time. In a few cases in the lower field there has been a water shortage, due to the drought that is now ended.

The Glen Alden Coal Co. may reopen six of its mines that were closed under the Kohler act, following the efforts of various committees during the week, if it can be assured that it is not liable to prosecution. This week the friendly suit to test this law comes up in court.

PITTSBURGH

Market Remains Stagnant—Slight Increase in Industrial Demand—Retail Movement Abnormally Light.

The market remains in a stagnant condition, despite the progress of the season and the slight improvement in industrial operations. Such increase as there may have been in shipments to the industries is nearly balanced by the decrease in the Lake movement. The key to the particular stagnation that obtains in the district, as compared

with coal conditions generally, is of course the competition of non-union districts.

All the independents in the Connelville region have recently advanced from the independent scale of July 1 to the Frick scale of Aug. 1, but they are left with a strong competitive advantage. Connelville coal prices have not advanced materially.

Pittsburgh district gas coal continues in fair demand, perhaps with a slight improvement. Prices are fair but not particularly remunerative. Demand on retailers for domestic coal is very small, although there has been some improvement in the past week or two.

Prices are not quotably changed from those of a week ago, figures on steam coal being chiefly asking prices, with little business done, while in gas coal there is a definite market. Quotations are shown in the Weekly Review.

UNIONTOWN

Coal Market Inactive—Resumption of Coke Plants Follows Better Call.

While there has been a decided improvement in the coke market, resulting in plants resuming here and there, coal remains inactive with prices stationary and demand not much better. There is a little more byproduct coal moving but the price remains at \$2. Other grades carry prices from \$1.50 up.

central Pennsylvania field will produce a little in excess of 38,000,000 tons. This will be the lowest production since 1908.

Tabulations showing monthly production of union and non-union mines from December, 1920, to August, 1921, inclusive, discloses heavier losses by mines operating under the present wage scale. In other words, mines that have made the wage adjustment have taken about 5,963 carloads of business from the mines that have not made the adjustment.

Central Pennsylvania, for the year 1921, from January to September, has lost a total of 68,227 cars or 3,411,000 tons, from all sources. Fall demand is expected to increase the production rate.

FAIRMONT AND PANHANDLE

Conditions Unchanged—Lakes Still Sluggish—Some Inquiries but Little Actual Closing.

FAIRMONT

Operating conditions were little improved during the week ended Sept. 17 and only about 25 per cent of the mines were in operation, such mines being engaged in filling contract orders. The spot tonnage was very small although some coal was being consigned to Canadian railroads. Aside from a better line of inquiries, the spot market remained sluggish.

NORTHERN PANHANDLE

Conditions remained practically unchanged with inquiries being circulated but no new business developing as a result. Northern and Inland West markets were securing the bulk of production and the Lake outlet was insignificant.

EASTERN OHIO

Production Drops—Mines Hard Hit by Lake Slump, Which Is Passing—Industrial Stagnation Lowers Prices.

Mines are just about holding their own, even though properties which were operating rather exclusively on the production of Lake coal have either closed or are curtailing output because of the continued slowing down in the Lake trade and lack of sufficient demand from other quarters. Tonnage mined during the week ended Sept. 17 amounted to 342,115 tons, or approximately 55 per cent of capacity. Accumulated figures indicate an aggregate production for the current year of 12,458,115 tons as against the total rated capacity for that period of 23,150,000 tons, based on railroad ratings.

Association mines operated 42 per cent of possible worktime during the week and produced approximately 50 per cent of capacity. Statistics show that "no market" conditions have increased, now being estimated at about 58 per cent.

Railroad fuel is conservatively estimated to be about 35 per cent of the total output. It is expected that the requirements of the carriers will be increased with the approach of cold weather and heavier traffic.

The general industrial situation remains unchanged, as gains in one branch were offset by losses in another. The market is quiet, and competition is keen for such business as is offering. Due to the continued apathy in demand, there was a slight softening in spot quotations.

Lake movement is a little more liberal, but many steamers are compelled to make two ports to fill out loads, as well as a number going up light. However, it is expected, in view of the fact that the reduced rail rates from mines to lower ports expire on Oct. 31, that there will be a flurry in this movement during October.

UPPER POTOMAC

Demand at Complete Standstill—Prices out of Line with Non-Union Fields.

Comparatively few mines were in operation during the week ended Sept. 17, the situation being unchanged as compared with the preceding week. Lower prices prevailing in non-union fields have brought the general demand to a complete standstill. With buying at such a low ebb, prices naturally remained at an unprofitable level, with mine run \$1.75 a ton and even lower.

Middle West

SOUTHERN ILLINOIS

Some Unexpected Activity—Heavy Railroad Buying—Standard Lump Goes Up—All Steam Sizes Down.

Carterville domestic lump is far oversold at \$4.05@4.25 and orders must be accompanied by those for egg and nut. Nut is almost as hard to move as screenings, which size has been offered at as low as 75c. Railroad orders are heavier than usual. A slowing up in car supply is reported.

In the Duquoin and Jackson County fields similar conditions prevail as to prices. The heaviest tonnage from any of the fields is moving North and Northwest.

Mt. Olive shows up more active. Prices are unchanged, but working time is better and prospects brighter.

The Standard field apparently has resumed domestic activity. Heavy buying of mine run is helping several mines. This is railroad coal, low price, but it covers cost and will soon help the congested screening situation. Prices on all kinds of Standard lump will probably continue to show steady advances. St. Louis shipments are fairly good; Chicago likewise, but the country west of the river is drawing heavily. Working time shows up better, averaging three to four days per week.

INDIANA

Sales Few, but Inquiries Increasing—Domestic Market Is Backward—Working Time Improves.

While the coal situation is becoming easier, it is far from satisfactory from the operator's point of view. There is a tendency toward more factory produc-

tion and there has been an increase in the number of inquiries for steam coal, but the volume of direct sales is far below normal. Some of the mines in the western and particularly the southern part of the state are working more hours a week, but for this season of the year the days of operation are disappointing. Mine run is selling at about what can be secured for it. Most of the quotations range around \$2.

Retail dealers are not advancing prices. The public does not appear to be taking advantage of present figures and for this reason there is little demand. In view of the attitude of the public, there is not likely to be any demand until cold weather comes and then it will be such that it will be difficult to fill.

WESTERN KENTUCKY

Situation Shows Little Change—Screenings Weaker—No Industrial Improvement.

Mines are working on an average of two days a week, and there is a slightly better movement to the South, and fair tonnage to the Northwest. Chilly weather is resulting in some little increase in retailers inquiries.

Screenings have been very weak, and some pea and slack has been shipped South at as low as 50c. a ton during the week. Fifteen cars of screenings went to one Louisville buyer at 60c. Nut and slack is stiffer, and low quotations are running around 90@95c. However, there is no large tonnage moving at these low prices, as a number of mines are quoting pea and slack at \$1.25 and nut and slack at \$1.50.

Operators are optimistic, and feel satisfied that business will pick up rapidly with colder weather, although increased industrial demand is needed more than domestic business.

Middle Appalachian

HIGH-VOLATILE FIELDS

Signs of Stronger Market—Production Still Low—Logan Labor Situation Better—Quotations Show More Firmness.

KANAWHA

Production failed to reflect any larger run of business during the week ended Sept. 17, the output averaging from 14,000 to 17,000 tons daily. Inquiries were undoubtedly more numerous but prices quoted were not such as to secure much new business. A slight improvement in the demand was limited to steam grades, the domestic market remaining stagnant.

LOGAN AND THACKER

Steam and domestic coals were in better demand in the Logan region. This gave impetus to production and the output at no time during the week was less than 700 cars daily. The labor scarcity, caused by the "seige," was gradually being overcome.

Williamson mines worked on a 40 per cent basis. There were signs of an

awakening demand and sales were somewhat improved. Contract orders, however, for the most part sustained production with railroad fuel constituting the bulk of such business.

NORTHEASTERN KENTUCKY

Only a few of the larger companies, having their own dock facilities, were operating in the Big Sandy territory. Marketing conditions remained virtually unchanged. Domestic demand was only fair. A few operators resumed for the purpose of getting out more coking coal.

Production improved somewhat, reaching about 54 per cent of capacity, or 110,000 tons. The output was heaviest on the C. C. & O. and the Interstate. However, no market losses were not far short of 100,000 tons. Larger plants were still working on a half-time basis, and there was little or no spot business offering.

LOW-VOLATILE FIELDS

Producers Cut Prices—Markets Quiet and Output Declines—Car Shortage Loss Appears—Tide Demand Unimproved.

NEW RIVER AND THE GULF

Lack of demand for export, bunker or coastwise coal kept down prices and production in the New River field during the week ended Sept. 17. The daily output varied around 16,000 tons daily. Prepared coal was down in price and slack was still going to New England at bargain figures.

Conditions in the Gulf region were

similar to those in New River, in fact the output was not over 30 per cent of normal. The feeble demand at Tidewater made the dullness even more pronounced and prices on Inland coal were also low.

POCAHONTAS AND TUG RIVER

Pocahontas production was slightly in excess of that for the preceding week, although not reaching more than 40 per cent of capacity. Failure to return empties from Western points, where a heavy tonnage has been flowing, caused a car shortage loss of about 7,000 tons. The Tide market was quiet; even bunker shipments were at a minimum and aside from the regular contract run much of the coal was going West at extremely low figures.

There was a slight spurt in Tug River production, the output increasing to about 80,000 tons. Production was somewhat retarded by a shortage of equipment, the same as in the Pocahontas region. The spot market failed to reflect any increased activity during the week.

Southern Appalachian

SOUTHEASTERN KENTUCKY

Domestic Prices Stimulated by Seasonal Demand—Steam Market Inactive.

Movement of domestic coal continues good. Screenings are in better demand, but prices remain low. Mine run lags with practically no call and not a few of the smaller mine run oper-

ations are reducing or closing down entirely.

With conditions in the South very materially improved, a better feeling exists among operators and a fairly good market is expected soon. The long hoped-for freight reduction is still having its effect and buying is still on a hand-to-mouth basis.

Prices on Harlan and Straight Creek block are \$3.50@\$3.75; egg \$2.50@\$3; nut and slack \$1.40@\$1.60; mine run, \$2@\$2.25.

West

UTAH

Retail Price Cut Made—Mine Sizes Readjusted—Trading Below Normal.

Another stir was caused recently when one of the largest retail agencies in Utah announced that it would sell furnace lump at \$8.25. Business resulting has been very fair, but even now is not what it should be at this time of year. Production continues at about 65 per cent of capacity.

Some trouble has been caused by the insufficient demand for the smaller sizes and a new size scale, as follows, has been announced by the operators. Straight lump will be over 3 in.; domestic lump over 1½ in.; stove over 1½ to 6 in.; nut over 1½ to 3 in.; screened slack over ¾ to 1½ in.; straight slack over 1½ in. The prices at the mines will be \$5, \$4.75, \$4.75, \$4, \$2.25, and \$1.75 respectively. The Coast trade continues satisfactory and is likely to increase somewhat.

News Items From Field and Trade

ALABAMA

George Park has been appointed associate mine inspector for Alabama, with jurisdiction over the second mining district. Mr. Parks succeeds David Kelso, resigned.

The Alabama Fuel and Iron Co. has a large force of men working at Overton on the slopes and drifts of its new mine. From McCombs Switch, the Central of Georgia R.R. is building a spur track to the new site. This mine will have an ultimate daily capacity of 2,500 tons of washed steam and domestic coal.

A. F. Hilleke, formerly superintendent of the operations of the Semet-Solvay Co. in the Birmingham district and now general manager of the coke department of the corporation, with headquarters in Syracuse, N.Y., was in the district on a trip of inspection recently and also visited the works of the company at Holt, where the byproduct ovens will soon resume operations after idleness of several months.

ILLINOIS

St. Clair County coal companies have been awarded the contracts to furnish the City of St. Louis with coal for the coming year, contracts having been signed for 184,000 tons, with more to be filled later. The Egyptian Coal and Mining Co. of Marissa has received the contract to furnish 87,000 tons of screenings for the waterworks and 46,000 tons for the Koch Hospital, at \$1.65 per ton. The price last year was \$2.87 per ton. The West Virginia Coal and Mining Co. has secured the contract to furnish 15,000 tons of mine run coal for the waterworks and 37,000 tons for the workhouse

at \$2.29 per ton. The price last year was \$3.95 per ton. The total amount contracted for is \$110,000 less than the figures for last year.

E. S. White of Chicago has succeeded E. J. Weimer as chief engineer of the Kathleen mine of the Union Colliery Co., at Dowell.

Charles E. Crouch, formerly vice-president and general manager of the March Coal and Fuel Co., has severed his relations with that company and has organized a new firm to be known as the C. E. Crouch Coal and Fuel Co. Mr. Crouch has taken over a mine near Peoria.

INDIANA

Chicago capitalists are said to be negotiating for the sale of the mine of the Bosse Coal Co., at Bucks, on the Big Four R.R. Benjamin Bosse of Evansville is president of the company.

E. L. Reed, vice-president of the Walter Bledsoe Co., returns to Indianapolis after being in charge of the company's office in Cincinnati. H. L. Jump, in charge of dock operation at Indiana Harbor, succeeds him.

Notices of an examination for mine bosses, fire bosses and hoisting engineers for District No. 11, United Mine Workers of America, have been sent out by the Indiana State Mine Inspector. The work will be open to all United States citizens who are engaged in the coal mining industry. The first examination will be held at Terre Haute on Oct. 2, and another meeting will be held for the southern district at Evansville, on Oct. 3. Registrations for entering in the examination will close at 9 o'clock in the morning, and all names should be in by that time.

H. M. Ferguson, president of the Clinton Coal Co. and the Ferguson-Spears Coal Co., Clinton, has signed a pledge for \$10,000 to the Vermillion County hospital fund. He is president of the county hospital board which is making a campaign to raise money.

KENTUCKY

The Asher Coal Mining Co., with operation at Varilla, on the Harlan road, has closed with the Jeffery Mfg. Co., of Columbus, for what is to be the longest retarding conveyor in the world. It will bring the coal from two seams, the highest of which will be 1,500 ft. above the railroad.

E. M. Sackett spent several days in Pineville recently in connection with the purchase of the eight miles of railroad on Puckett's Creek, known as the Black Mountain R. R. and his purchase of the Frost interest in coal land comprising 4,000 acres at the head of Puckett's Creek.

The Kentucky Block Fuel Co. has commenced the erection of a new steel tippie at its properties at Pikeville, estimated to cost about \$30,000. A number of other extensions and improvements will be made at the properties.

The Commercial Coal Mining Co., Lexington, recently organized, is arranging for the operation of coal properties. The company has a tract consisting of over 300 acres of land, and proposes to install a plant and equipment for a daily output of close to 300 tons. W. H. Hoover is president; and J. H. Hall, secretary and manager in charge.

The Western Kentucky Coal Bureau, traffic organization for western Kentucky coal operators, has moved its headquarters from the Intersouthern Building to 613 Starks Building, Louisville.

The St. Bernard Mining Co., Louisville, has moved into the Flexner Building, formerly the Masonic Temple.

W. B. Gathright, manager of the Louisville division of the St. Bernard Coal Mining Co., is making a trip to Cincinnati, Cleveland, Pittsburgh and other cities on combined business and pleasure, one of his plans being to investigate methods in use in some of the larger retail companies in coal handling and accounting.

H. H. Alpers, Pineville, manager for the Riddle Coal Co., has been transferred to the head office of the company at Chattanooga. The Pineville office will be in charge of **J. E. Settle**, who is also a Straight Creek operator.

T. C. Thompson, of the Federal Coal Co., a large operator in the Straight Creek field, is in New York.

White L. Moss, of the White Moss Coal Co., was in Louisville recently.

MARYLAND

Judge Robert R. Henderson sustained the demurrer of the **Consolidation Coal Co.** in the equity suit filed two years ago by 116 former employees for back wages alleged to be due them for shortages of weights from October, 1902, to October, 1917. The suit involves more than \$1,000,000. The court held no allegation was made in the original suit that the weighmaster intended to give short weight. Leave to amend in ten days, to conform to the views of the court, was granted.

The **Marva Coal Co.**, Baltimore, has been organized with a capital of \$50,000 to operate coal properties in the state. The company is headed by **James P. Wilcox**, **Frederick H. Henninghausen** and **Charles F. Stein, Jr.**

MINNESOTA

B. Gorham, second vice-president of the Northwestern Fuel Co., recently visited Duluth with Mrs. Gorham. They motored here from St. Paul.

Peppard & Fulton have completed the pouring of the foundation for the machine shop and office building of the **Superior Coal & Dock Co.** at Duluth.

J. H. Macouvray, secretary of the Northwestern Fuel Co., whose main office is in St. Paul, has been in Duluth recently on a tour of inspection of the company's docks.

The **Long Branch Coal Sales Co.**, Minneapolis, is a new incorporation, with a capital stock of \$50,000. Incorporators are **O. W. Miller**, **L. L. Benjamin**, **G. C. Borchard** and **G. A. Anderson**.

NEW YORK

Ira H. Shoemaker, formerly for a year with the **Marquette Coal Co., Inc.**, as assistant general sales manager, has been made vice-president of the company, in charge of sales.

The **Dooley-Weston-Shuler Coal Co.** has filed notice of change of name to the **D. S. Weston Coal Co.**

W. A. Reed has been appointed Buffalo sales agent of the **Philadelphia & Reading Coal & Iron Co.**, to succeed **D. L. Tuttle**, deceased. He has been promoted from the management of the Detroit agency of the company and was formerly its Western traveling agent, with headquarters at Elyria, Ohio.

P. O. McIntire, of Cleveland, who lately took a position in the Buffalo office of the **Lake City Coal Co.**, of Cleveland, has been elected vice-president of the company. He has Ohio mining operations, but will remain in Buffalo for the present.

Bids were opened on Sept. 7 for furnishing the Department of Plants and Structures of the City of New York with 4,000 tons of Buckwheat No. 1 and 1,000 tons of bituminous. The lowest bidders were the **Commonwealth Fuel Co.**, who submitted a price of \$3.59, gross ton, on the buckwheat, and **George D. Harris & Co.**, on a basis of \$2.34, net ton, f.o.b. mine, on the bituminous.

OHIO

W. R. Tuttle, of the **Tuttle Coal Corporation**, has returned to his Cincinnati office after a two weeks' vacation at his old home in Hastings, Minn. While in the northwest Mr. Tuttle paid a visit to the docks on Lake Superior.

Kuper Hood, sales manager for the **Houston Coal Co.** has returned to his office in Cincinnati after six weeks spent abroad.

B. L. Hutchinson, **Frank B. Stewart**, **Brooks Hutchinson** of Fairmont and **Gorin Arnold** of Charleston were present at a directors meeting of the **Central Fuel Co.** held in Cincinnati recently to outline the further policies to be pursued now that the Charleston and New York offices of the concern have been closed. The Cincinnati and Detroit offices will be continued.

The **Kentucky Fuel Co.**, of Cincinnati, has been appointed sales agent for the

Malva Coal Co. and the **Hughes Coal Co.**, two operations on Horse Creek in Clay County, Ky.

Colonel Charles B. Moriarty, of Cincinnati, western sales manager for the **Cabin Creek Consolidated Coal Co.** is away on a vacation in the Adirondacks.

T. V. Bush, formerly general traffic manager of the **Raleigh Coal & Coke Co.**, has accepted the position of coal service agent of the **C. & O. Ry. Co.**, headquarters at Cincinnati.

The Cincinnati Traffic Department of the **Raleigh Coal & Coke Co.**, by reason of consolidation, has been transferred to the traffic manager's office at Raleigh, the treasurer's office at Cincinnati absorbing the sales duties that formerly came over that desk.

The **Murray City Coal Co.**, Columbus, has just completed the installation of large overhead bins with a capacity of 1,500 tons daily. This concern is managed by **C. H. Boardman, Jr.**

Judge Frank E. Christian of Lynchburg, Va., president of the **Imperial Coal Association**, was in Cincinnati recently attending the sessions of the **American Bar Association**.

PENNSYLVANIA

The **J. Ed Lee Coal Co.**, Philipsburg, is erecting a new concrete and tile building at the No. 9 mine, to be used as first aid and charging room for storage batteries.

H. W. Montz has been appointed assistant general manager, **Lehigh Valley Coal Co.**, Wilkes-Barre.

The Public Service Commission has dismissed the complaint of the **St. Clair Coal Co.** against the rates of the **Eastern Pennsylvania Light, Heat and Power Co.** Objections were made to increased power rates effective in 1919 and 1920 but the commission found that the wholesale rates were not unreasonable nor unjustly discriminatory.

Bruce Payne, vice-president of the **Alden Coal Mining Co.**, of New York City, has severed his connection with that concern to become head of the **Payne Coal Co.** with headquarters at Wilkes-Barre, Pa. He will have as his associate **C. E. Banker**, now representative of the **Alden Co.** at Wilkes-Barre. Mr. Payne was at one time a member of the coal firm of **Haddock and Payne**, at Wilkes-Barre, and later served throughout the late war. Mr. Banker was at one time connected with the **Lehigh & Wilkes-Barre Coal Co.** and with the **Central Coal Co.** In addition to handling anthracite the new concern will deal in bituminous.

The **Clearhill Coal Mining Co.**, Burnside, has been organized with a capital of \$150,000, to operate properties in that section. **William G. Browne** is treasurer.

The **Mount Airie Coal Co.** has filed notice of change of name to the **Mount Airie Coal Mining Co.**, at the same time increasing its capital from \$80,000 to \$150,000 for proposed expansion.

State charters recently issued to coal companies are: **Reliable Coal Co.**, Philadelphia; capital stock, \$50,000; treasurer, **Max B. Shubin**, who is an incorporator with **Joseph I. Isaacman** and **Harry Polish**, Philadelphia. **James C. Stineman Coal Co.**, South Fork, mining of coal and purchasing of coal lands; capital, \$50,000; treasurer, **I. E. Lewis**, Ebensburg, who with **James C. Stineman**, **Ebensburg** and **Leroy Mahan**, South Fork, incorporated the company.

The **Jefferson Gas Coal Co.** has notified the office of the Secretary of the Commonwealth that the capital stock of the company has been increased from \$200,000 to \$240,500.

The **Schuylkill Valley Coal Co.**, through its president, **A. B. Benesch**, has notified the Secretary of the Commonwealth of an increase in capital stock from \$5,000 to \$500,000, and an increase in indebtedness from nothing to \$150,000.

UTAH

The Federal Land Office has sold about 160 acres of coal land in the Castlegate district, which the State of Utah was claiming as its property under the state school grant. Protest was immediately made in a letter sent out from the office of the state land commissioner on learning of the sale. The letter announces that the state will insist on its right to be granted a hearing of a former protest filed against the sale of this land. The government has sold the land to the **Utah Fuel Co.** The Utah attorney-general is preparing the case for the state.

C. A. Allen, State Inspector of Mines, who has returned to Salt Lake City after an inspection trip in the southern part of the state, reports he found huge coal fields stretching from Escalante to the Arizona-Utah line. Mr. Allen says the seams run as high as twenty feet in thickness. On account of the distance from a railroad, and the nature of the country lying between, the coal is probably of only local economic value as yet.

The mine rescue team of the **Independent Coal and Coke Co.** at Kenilworth won first place in the international contest staged at St. Louis recently. It is said that the Utah team easily took first place in both the first-aid and mine rescue tests.

Bonds belonging to the **Cameron Coal Co.** which were taken from the office of the company in October, 1918, have been found in Chicago.

VIRGINIA

The **Superior Red Ash Fuel Co.**, recently incorporated, is to start development at once, according to **D. C. Yates**, president of the company. The company is incorporated for \$200,000 and has acquired a very valuable lease of 754 acres of **Raven Red Ash** coal at Red Ash.

George Howard Loeb, Norfolk manager of the **Central Pocahontas Coal Co.**, is in the West on his honeymoon. He was married recently to **Miss Beatrice Morris**, of Norfolk.

WASHINGTON, D. C.

Recent revenue rulings of interest to coal producers, are:

Section 214 (a) 8—Deductions allowed: Depreciation.

Section 214 (a) Art. 161: Depreciation. The term "useful life" as used in Article 161, Regulations 45, is interpreted to mean the period of time over which an asset may be used for the purpose for which it was acquired. In the case of a new building, this period starts at the time the building is completed and capable of being used. Buildings under construction are not subject to a depreciation allowance for income tax purposes.

Section 214 (a) 10—Deductions allowed: Depletion.

Section 214 (a) 10 Art. 208: Determination of mineral contents of mine. Held that when material error has been made in an estimate of mineral contents of a mine, a new estimate may be made, and the capital remaining to be recovered should be recovered thereafter through depletion in the year or years of continued operation.

Dr. George Otis Smith, director of the Geological Survey, will address the annual meeting of the **New York State Oil Producers' Association** at Olean, on Sept. 31. His subject will be "The Real Value of Oil." Dr. Smith has accepted an invitation to address the General Staff college of the Army on Oct. 5 on the "Strategy of Minerals." Later in the course, he will address the class on "Superpower."

WEST VIRGINIA

The deal for the purchase of the holdings of the **Winters Coal Co.**, a Pittsburgh concern, to the **Parkersburg Dry Dock Transportation Co.** of Parkersburg has finally been consummated.

A. Spates Brady, coal operator, has moved his offices from Fairmont to Elkins.

Capitalized at \$25,000, the **Coburn Hill Coal Co.** has been organized with a view to operating near Tunnelton in Preston County. Active in forming this company were: **H. C. Miller**, **A. L. Sidwell**, **L. W. Dawson**, **E. L. Wolfe** and **A. C. Bolyard**, all of Tunnelton.

Offices of the **Blair Parke Coal Co.** of Philadelphia, in Fairmont, have been removed from the front suite of the third floor of the Home Savings Bank Building to rooms 14 and 15 of the same building. Although many other coal brokerage concerns have closed their branch offices in Fairmont in recent months, this is one of the companies whose office has been retained, **Kenna Clark** being the local manager.

Uniontown capital is principally interested in the **Bear Mountain Gas Coal Co.** which has just been organized with a view to operating in the Bear Mountain territory near Flemington. The capital stock has been fixed at \$200,000, the general offices of the company being at Uniontown, Pa. Closely identified with the new coal corporation are **A. Q. Davis**, **F. B. Hess**, **J. E. Hess** and **E. L. Zearley**, all of Uniontown, Pa., and **W. A. Gadd**, of Morgantown, Pa.

Interests affiliated with the **Percy Heller & Sons** corporation of Philadelphia have about completed arrangements for shipping coal from the Thacker field over a branch of the N. & W., which runs from Lenora. Four to five cars a week are moving from the temporary tippie which will give way to a modern plant in the next few months.

Nelson Rodgers of Cleveland, has purchased three-eighths of an undivided interest in six tracts of coal land in the Pittsburgh seam on Sycamore and Buffalo creeks in the Harrison County field from the trustees of Isaac Semans, bankrupt, the purchase price being close to \$58,000. Trustees who joined in making a final conveyance of the property were C. E. Lenhart, W. W. Marshall and Frederick G. Kay. These tracts comprise the coal under the Andrews farm, the Curtis Allen tract, the A. A. Post tract, the Hiram Post tract, the George T. Post tract and the Robert Wagner tract.

Frank Stewart, president of the Winifrede Coal Co. was one of the executives of West Virginia mines who was caught in the armed demonstration of the miners in their recent advance on Logan. He endeavored to stave off the robbery of the company's store but was unsuccessful.

Vice-President William O'Toole of the Central Pocahontas Coal Co., made a roundabout return to Welch, after a stay in New York, by visiting Cincinnati while en route.

Carl F. Keck, formerly superintendent for the Summit Connellsville Coal & Coke Co., Pleasant Unity, Pa., is now general superintendent of the Woodland Coal Co., Capitan.

E. H. Arnold, president of the Randolph Colliery Co., located at Elkins, returned about the middle of September from a trip to France, having been among the members of the American Legion who visited the battlefields during August.

George Waddell and Alex Waddell, of Philippi, who control the Waddell Coal Co., were recent visitors at Elkins.

WISCONSIN

C. G. Watts, Minneapolis manager of the Great Lakes Coal and Dock Co., made an inspection of the company's dock construction work at Superior.

C. S. Williamson, of Chicago, Western manager of the Mead-Morrison Mfg. Co., visited the Superior dock of the Great Lakes Coal & Dock Co. recently.

BRITISH COLUMBIA

Under the laws of British Columbia the collieries are required to pay wages in fortnightly periods. **The Pacific Coast Coal Mines, Ltd.**, operating on Vancouver Island, which ceased work some months ago owing to financial difficulties, was guilty of a breach of this statute. Recently action was taken on behalf of twenty men whose wages were not paid within the time limit defined by legislation. Judgment was secured and the company fined \$25 in respect of each employee named. It is said that the case will be appealed.

In the complaint of the **P. Koenig Coal Co.**, the I. C. C. decides that the rate charged on shipments of coal from points in Ohio, Kentucky, West Virginia, and Pennsylvania to Seven Mile Road yard in the city of Detroit were illegal.

In the matter of intrastate rates on bituminous coal in Ohio, the **West Virginia Coal Association** has been permitted by the I. C. C. to intervene.

In the complaint of the **Mathieson Alkali Works**, the **Virginia Iron, Coal and Coke Co.**, intervenor, asks that the commission find that the rates on coal from the Pocahontas, Va., group to stations on the N. & W., between Bristol and Roanoke, are unreasonable and that they be reduced. The railroad contends that the complaint should be dismissed and that a readjustment of all rates in this territory be made.

In the complaint of the **Fairmont & Cleveland Coal Co.**, request has been made that the commission refuse to reconsider its opinion which provides for proper car distribution at their mines in West Virginia, the railroads having asked for a reconsideration.

The Terre Haute, Indianapolis & Eastern Traction Co., in a brief to the commission, says that the commission should decide that the rates on bituminous coal from points in Indiana to Terre Haute were unreasonable between June 25, 1918, and Aug. 31, 1920.

The Consolidation Coal Co. of Baltimore complains against unreasonable combination rates on bituminous coal from points on the Millers Creek R.R. in Kentucky to various destinations and Canadian points.

Traffic News

The Interstate Commerce Commission has set a hearing for Oct. 17 in Washington on the matter of increased freight on coal to the Twin Cities under the **Holmes & Hallowell case**. Trade organizations of Minneapolis complained that the increase was ordered without their being allowed to be heard. The increase was 13½c. on soft coal.

In the complaint of the **Hillsboro Coal Co.**, the I. C. C. decides that the failure of the Cleveland, Cincinnati, Chicago and St. Louis and other railroads to make arrangements whereby the coal company's mine on the Big Four at Hillsboro, Ill., would be enabled to avail itself of the service, facilities and rates of the Chicago & Eastern Illinois in connection with the interstate transportation of coal, does not result in undue prejudice or disadvantage.

In the complaint of the **Benton Coal Mining Co.**, the commission decides that the failure of the C. B. & Q. to extend to the coal company's mines near Benton, Ill., the services, rates and facilities of the C. B. & Q. through trackage or other agreements does not subject the coal company to undue prejudice or disadvantage, and dismisses the complaint.

The M. E. Case Coal Co. and others of Peoria, Ill., have complained to the I. C. C. against unreasonable rates on bituminous coal from La Marsh, Ill., to Galesburg, Ill., because the rate was not the same as that from Peoria to Galesburg.

The Sloss-Sheffield Steel & Iron Co., of Birmingham, Ala., alleges unreasonable rates on coal between points in Alabama because of the increase under General Order No. 28 being applied to separate factors of combination rates.

The Standard Portland Cement Co., of Charleston, S. C., complains against unreasonable rates on coal from Carbon Hill, Dora, Empire and Townley, Ala., to Leeds, Ala.

In the complaint of the **Minnesota Steel Co.**, the Director General of Railroads has filed a brief contending that the rate of \$15 per car on coal shipped between June 25 and Nov. 15, 1918, from Missabe Junction, Minn., to Steelton, Minn., was not unreasonable and that no repatriation should be awarded.

In the complaint of the **Reeves Coal & Dock Co.**, the commission decides that demurrage charges on coal held at Minneapolis were illegally assessed and awards the company repatriation.

The I. C. C., in the case of the **Michigan Builders Supply Co.**, has decided that the rate on anthracite from Carbondale, Jessup, Scranton, and Winton, in Pennsylvania, to Detroit, between June 25, and Nov. 12, 1918, was unreasonable because it exceeded \$3.70 a ton.

Diamond drilling is in progress on the Chu Chua coal deposits near Kamloops. The purpose is to thoroughly explore the field and, if warranted, to make the investment necessary for further development.

COAL OUTPUT FOR AUGUST, 1921

VANCOUVER ISLAND DISTRICT	
Mine	Tons
Canadian Western Fuel Co.....	68,430
Canadian Collieries, Ltd.,	
Comox	35,888
South Wellington	7,495
Extension	17,875
Nanoseo Wellington Collieries..	3,865
Granby Consolidated MS&P	
Co., Cassidy	23,802
Old Wellington (King & Foster)	481
Total	157,836
NICOLA-PRINCETON DISTRICT	
Middlesboro Collieries.....	5,563
Fleming Coal Co.	3,178
Coalmont Collieries.....	9,607
Total	18,348
CROW'S NEST PASS DISTRICT	
Crow's Nest Pass Co.,	
Coal Creek.....	44,318
Michel	26,923
Corbin Coal & Coke Co.,	
Corbin	3,936
Total	75,177
Grand Total	251,361

years ago with the Smokeless Fuel Co., and for the last ten years with the Darby Coal Sales Co., died in Covington, Ky., recently.

Death recently ended the career of **Clarence Ivan Lantz**, general manager of the Rosedale Coal Co., and one of the leading business men of Morgantown, W. Va., at the West Penn Hospital at Pittsburgh, following an operation. Not only was Mr. Lantz eminently successful as a coal man but he was widely known as a bridge engineer. He was one of the pioneers in the Scott's Run field and in 1917 aided in the organization of the Rosedale company. He was general manager of the Mapletown Coal Co. and sales manager of the Blue Flame Fuel Co.

Warren C. Barber, since 1916 connected with the Alden Coal Mining Co., died at his home in Brooklyn on Sept. 5. The funeral service, which took place on Sept. 8, and was attended by many coal men.

J. Luther Neel, Norfolk manager for the Weston Dodson Co., and one of the best known coal men of that section of the State, died at the Norfolk Protestant Hospital recently. He had been in declining health for several months. He was associated with the Pocahontas Fuel Co. early in his career, and with other prominent coal concerns.

William G. Halbert, one of the pioneers in the coal industry in Illinois died recently at his home in Danville. In 1895 he organized and developed the Halbert Coal Co.

Coming Meetings

The annual Institute meeting of the **Alabama Coal Operators' Association** is scheduled to be held at the Empire Mines of the Empire Coal Co., at Empire, Walker County, Oct. 4. This is the first meeting to be held by the Institute in several years, the sessions having been dispensed with during the war.

The American Mining Congress and National Exposition of Mines and Mining Equipment. The twenty-fourth annual convention on Oct. 17 to 22 at the Coliseum, Chicago, Ill. Assistant secretary, John T. Burns, Congress Hotel, Chicago, Ill.

American Manufacturers Export Association will hold its twelfth annual convention at the Waldorf-Astoria, New York City, Oct. 5 and 6. Secretary A. W. Willmann, 160 Broadway, New York City.

The Coal Mining Institute of America will hold its annual meeting at Pittsburgh, Pa., Dec. 7, 8, and 9. Secretary H. D. Mason, Jr., Chamber of Commerce Bldg., Pittsburgh, Pa.

An Industrial Relations Conference for all industries in the State of Pennsylvania has been arranged for October 24 to 27 at Harrisburg, Pa. by the Commissioner of Labor and Industry, C. B. Connelly.

The sixth annual convention of the **National Association of Purchasing Agents** will be held Oct. 10-13 at Indianapolis, Ind.

Obituary

Advices received in Birmingham announce the death of **J. H. Lord**, a well-known electrical engineer, which occurred in Bengal, India, where he was connected with the Tata Iron Works. Mr. Lord was in charge of the installation of the electrical equipment in the big Fairfield plant of the Tennessee Coal, Iron & R.R. Co.

Oscar Horton Chellborg died at his home in New Rochelle, N. Y., on Sept. 14. He was 62 years old and for many years connected with the coal firm of Robinson, Haydon & Co. He was a graduate of the College of the City of New York; charter member of the Knickerbocker Yacht Club and for many years a member of the New Rochelle Yacht Club, and a former chairman of the regatta committee of that organization.

Cassius C. Thomas, former resident of Evansville, Ind., and who for years operated large coal mines in Evansville and at Morgantown, Ky., died recently at Silver Palm, Fla.

W. Lacey Kirtley, long a figure in the Cincinnati coal trade, having started many